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ON MECHANICAL EXPLANATION.

I. *On the Definition of the Mechanical Ideal.* — In philosophy and in science we are frequently called upon to face a certain hypothesis, — the hypothesis, namely, that all the phenomena of the world in which we live are susceptible of a mechanical explanation. In discussing method we are in the habit of referring to this point of view as the 'mechanical ideal.' Now we all feel that in a way we understand what is meant by the mechanical ideal, whether or not we are willing to entertain it, and yet it must be admitted that the literature of philosophy is much richer in instances of an instinctive application of this ideal than in examples of a serious effort to define its meaning. We feel no little confidence in our right to pronounce certain methods of explanation inharmonious with the ideal, but such exclusions still leave us in considerable doubt respecting the inclusion of the term.

For example, it would probably be admitted by all that a biologist who denied the possibility of finding among the physico-chemical conditions of an organism and its environment at any moment the determinants of the growth of the organism at that moment, would definitely have rejected the mechanical ideal. But, on the other hand, would the adoption of a physico-chemical theory of growth be equivalent to the acceptance of the ideal? At least, we can understand the eagerness of an Ostwald to replace the vague concept of "chemical affinity" with a picture whose details are wholly physical of the processes which are involved in neutralization, solution, and so forth. This sympathy

may be taken as the expression of an instinctive feeling that the phenomena of chemistry themselves are in need of a mechanical explanation. A like satisfaction attends every successful effort to reproduce certain physical phenomena (for example, those of heat) in terms of concealed mass-motions. In short, a type of explanation which at one stage of our progress and with a view to certain exclusions we may advance as mechanical, will itself appear at another stage to be in need of mechanical explanation. It would thus seem that the use of the concept in question is subject to that vacillation which makes definition of it at once difficult and imperative.

To begin with, the most natural suggestion, and the one most closely in accord with historical development, would view our ideal as arranging the sciences in a series of subsumptions of such nature that we might regard each science as capable of reduction to the one next below it, until at last we arrived at a fundamental science to which all the others might be reduced. The adjective 'mechanical' attached to our ideal would then indicate that this fundamental science was none other than the science of mechanics. Indeed, it would seldom occur to the scientist that there could be any sense in which the phenomena of mechanics themselves were in need of further explanation. If this suggestion be adopted, our task of defining the mechanical ideal will be accomplished when we have given a definition of mechanics and an explanation of the sense in which one science is capable of reduction to another. Such an insight into the meaning of the term having been obtained, we may proceed to examine the grounds which could be urged for the acceptance of the ideal as a guide to our speculation.

In defining the science of mechanics, it is necessary that our method should make use of such differentiæ as are of general application. The problem of the classification of the sciences is very far from having reached solution, but as a contribution to it I may suggest that the characteristics which best distinguish a science are those which, in technical language, are termed the 'dimensions' of the science. The concept of the dimensions of a science, although of familiar application, is not quite easy to de-

fine; that is, it is difficult to bring it under the concept of dimensions in general. For our present purpose, it will be sufficient to illustrate the meaning of dimensions and to show in what sense they may be used to differentiate the sciences.

As a particularly simple case, let us consider the dimensions of a system of bodies to which we might give the name of a Laplacean system. Such a system would be defined in terms of the familiar image once offered by Laplace; that is, it would be a system such that, if we knew the masses, the space distribution, and the velocities at all points at any given moment, we should be able to calculate the masses, the space distribution, and the velocities of all points for any other moment. The formula by which such a calculation would be made might be called the axiom of the science dealing with such systems. It is evident that there are four independent observations which must be made at every point in the system, and which must be substituted in the formula, before any determinate problem is presented to us. These four independent observations are mass, length, time, and velocity; and the use to which we put them might suggest an analogy with the way in which we use independent coördinates to determine the position of an element in any dimensional manifold. The concept of the dimensions of our science, however, differs slightly from this, in that we consider not the independent data, but the independent kinds of measurement involved. Thus velocity, being a ratio of length and time, is not regarded as a dimension in the sense now contemplated, but implicitly contains the dimensions length and time; so that in the end the dimensions of a science dealing with Laplacean systems would be mass, length, and time.

With the concept of a dimension now clear, we may proceed to define mechanics as the science whose dimensions are mass, length, and time. We shall, of course, not be understood to identify mechanics with the science of the Laplacean systems in the sense of the preceding illustration, for, while such a science would certainly be mechanical, the converse is not implied, that mechanics is the science of Laplacean systems. If, in fact, we were to compare this definition with the contents of an ordinary text-

book of mechanics, we should see that our definition was both broader and narrower than that which is implied in the subjects there treated of. It is broader for the reason that it would include such widely divergent systems of mechanics as those based on the theory of rigid connections, on the one hand, and those based on the theory of action at a distance, on the other. It is narrower in that it would exclude certain problems which are generally handled in text-books on mechanics and yet which we cannot regard as properly mechanical, — for example, the problems of impact. For evidently no knowledge of the masses, space distribution, and length-and-time quotients, would inform us whether two colliding bodies would behave as elastic or as inelastic bodies. Without this knowledge, however, the problem of impact is indeterminate. The knowledge itself can only be conveyed in terms of a coefficient of elasticity, which must at present be regarded as a new dimension. The breadth, however, is evidently proper to a definition which is to include the common feature of all schools of mechanics, without taking sides on questions of detail. The narrowness succeeds in relegating to the domain of general physics phenomena that are generally recognized as lacking a purely mechanical solution.

Mechanics, then, is the science whose dimensions are mass, length, and time; it remains to be seen what is meant, when we speak of reducing other sciences to mechanics. Our method of offering such an explanation must depend upon the acceptance of our suggestion that the various sciences may be differentiated in terms of their dimensions. This suggestion requires some defense. It will be seen at once that it is neatly applicable to the definition of certain recognized branches of physics. For example, thermodynamics would involve the additional dimension *temperature;* electrostatics and electrodynamics, the additional dimension *quantity of electricity;* magnetism, the dimension *strength of pole.* But it will not at once be evident that there is any sense in which we could define chemistry in terms of a specific dimension or group of dimensions, and a like difficulty would pertain to the definition of biology, psychology, sociology, etc.

As for chemistry, we must distinguish between its condition in

the past, in which it presented a series of more or less general observations which could not be united in any single formula, and a tendency towards systematization which characterizes its present. There are, it would seem, two main problems of chemistry: (1) to deduce the properties of a compound from the properties of the elements entering into it; (2) to develop a formula by which the various properties of elements may be expressed as functions of one of their number, which may then be taken as defining the element.

In connection with the first of these problems, Ostwald has divided the properties of compounds into the 'additive,' the 'constitutive,' and the 'colligative.' The 'additive' properties of a compound are the simple sum of the properties of the elements combined: thus the molecular mass is the sum of the atomic masses. The 'constitutive' properties are those which depend not only on the elements combined, but upon a factor which is usually called the 'arrangement' of these elements. The 'colligative,' finally, depend wholly upon the arrangement of the elements. If, now, as Ostwald suspects, it should be found that the 'constitutive' and 'colligative' properties are ultimately reducible to the 'additive,' or if the factor which is termed 'arrangement' may be conceived to depend on the space distribution,—or space order, let us say,—the whole problem of the properties of compounds presents no dimension which does not belong to the elements themselves. If, on the other hand, the reduction of 'constitutive' and 'colligative' properties to 'additive' cannot be effected, or if the factor of 'arrangement' cannot be conceived in spatial terms, it is possible that the science of chemical compounds would possess a specific dimension of its own.

Again, the immediate result of the attempt to express all the properties of elements in terms of one of their number taken to be characteristic, is illustrated in the formulation of the periodic law. Imperfect as this scheme is recognized to be, it was still possible for Mendelyeff to predict the properties of an element as yet unobserved from the assumption of its atomic mass, and to find his prediction confirmed by later observation. The possession of

such a formula as the periodic law suggests would have a tendency to make atomic mass the dimension of chemistry.

May we not, therefore, say that in so far as chemistry succeeds in being a single science rather than tables of collated observations, that single science is definable by a specific dimension? And conversely, in so far as we are unable to assign any dimension to chemistry, does not the application of a single name to entirely independent observations depend rather upon an association of ideas, upon accidental similarity of method, than upon any right to regard that name as capable of a unique definition?

As to the other sciences mentioned, biology, psychology, sociology, etc., it is clear that they are interested in laws which apply to complex wholes. The terms in which these laws are stated are in general not applicable to the parts of which the wholes are composed. The question, then, as to whether these sciences are definable in terms of specific dimensions, is not identical with the question as to whether they are definable at all. If, for example, it were admitted that the phenomena of organic life could not be explained in terms of the physical and chemical constituents of an organism, it might be possible that a study of biology would lead to the discovery of a dimension which the physics and chemistry alluded to had not included. So, for example, it has been suggested that 'vital force' might be regarded as a property, related, say, to magnetic force as magnetic force is related to gravitation. To appeal to such a force would be to attempt to give biology a specific dimension. But if no such appeal is made, and if the biologist admits that the laws of the totals with which he is dealing can be constructed out of the physico-chemical laws of the parts which compose them, the science does not in the least cease to be definable, but it ceases to be an independent science. Its definition must now be sought in the nature of the totals or groups with which it deals. For this reason I am in the habit of referring to a science thus defined as a 'superimposed, science. It will be seen, then, that the differentiation of the sciences in terms of their dimensions is a differentiation which is only meaningful in case these sciences are independent; and conversely, to define a science as a 'superimposed' science is

to admit that it possesses no specific dimensions. For the rest, we are not interested in the question as to whether biology, psychology, and sociology are really 'superimposed' sciences or not.

Enough has perhaps been said to make it clear in what sense our suggestion that sciences may be differentiated in terms of their dimensions is applicable throughout the whole range of independent sciences. The advantage of this method of differentiation is that it yields us immediately the statement for which we have been in search, of the meaning of reduction. We may now say in general that *any science* x, *dimensions* abcd, *is reducible to any science* y, *dimensions* abc, *when it may be shown in any manner that the term* d *is expressible as a function of* abc. For example, let x be the science of thermodynamics, whose dimensions are mass, length, time, and temperature, and let y be the science of mechanics. The reduction of thermodynamics to mechanics is effected when we show that temperature is a function of mass, length, and time, or of any pair of these three terms. This reduction is exactly the one that has been effected by the mechanical theory of heat, in which it has been made to appear that temperature is a function of the velocity of certain concealed mass-motions. It would be easy to find in the physical speculations of our day other reductions of an exactly similar nature. Such a reduction having been made, the reduced science loses its independence with its specific dimension, and if retained in our thinking at all, must be treated as 'superimposed' science.

Thus we obtain, as the most general statement of the mechanical ideal, the hypothesis that *mass, length, and time, are the dimensions of natural science.*

II. *On the Possibility of the Mechanical Ideal.* — Having defined the mechanical ideal in a way that has at least the advantage of displaying its own motives, we are now in a position to consider the arguments that may be advanced for its acceptance or its rejection. We may at once lay aside as irrelevant all reference to our present accomplishment in the premises. It is obvious that we are indefinitely remote from the realization of the ideal as it has been defined; it is no less plain that many steps of modern

progress might readily be looked upon as conducting us toward such a goal. But if no discussion of this problem save the *a posteriori* is possible, our only business for the present is to possess our souls in patience and to await the results of experimental science. As an historical fact, however, there have been advanced reasons purporting to be *a priori* for supposing that the attainment of our end is impossible, and other reasons laying no less claim to an *a priori* character for expecting with confidence its ultimate realization. It is to a consideration of these *a priori* grounds for acceptance or rejection that we now turn. In the present paper I shall confine myself to the former class of arguments, reserving the discussion of the latter class for a future occasion.

That a mechanical image of nature can never be constructed has been urged on one of two grounds, — either on the ground that the image is self-contradictory and so meaningless, or on the ground that it is essentially untrue to nature. The former objection goes back to Parmenides and Zeno; it has never lacked representatives. The latter has been insisted upon most obstinately by those who have been impressed with the multitude of purposeful processes in nature, and who cannot convince themselves that nature could be described or its happenings predicted without making use of expressions that have reference to ends; but such reference, they feel, implies other laws than those which enable us to define a mechanical system.

Such objections to the meaningfulness of the mechanical image as turn on the difficulties in defining mass, length, time, and their combinations, cannot be discussed in this connection; we should find ourselves involved in some of the most perplexing chapters of metaphysics. Yet we are not prevented from taking at once a certain attitude toward this class of objections. To any one who thinks that he has discovered contradictions or insufficiencies in the definitions ordinarily offered in the field of geometry, kinematics, and mechanics, we can only reply that it would be surprising if such imperfections were not to be found. The history of the search for definitions from Socrates to the present time makes nothing plainer than that the terms we use most instinc-

tively are the ones whose meaning it is most difficult to set forth. But on the whole we make progress. The particular inadequacy of mass, as defined by Newton, is not to be found in Mach's definition. Hertz, while admitting this, is still dissatisfied with the accomplishment of Mach, and if Hertz is not justified, nothing is more likely than that another critic will be. There is every reason to hope, however, that since the modern systematist has detected and removed the imperfections of Newton, the future critic will be able to detect and to remove the flaws that are latent in our current system. The history of the concept of mass is repeated in that of the other dimensions. No one who is acquainted with the problem of framing the axioms of geometry and kinematics is going to stake much on the perfection of any system that has yet been advanced, but neither can one find any single difficulty which from Euclid to Hilbert and Poincaré, for example, has not been overcome.

We may then take this attitude toward the first class of *a priori* objections to the mechanical ideal, namely: that if no definition of the terms in which we have presented this ideal is beyond danger of attack, yet no one inadequacy has been discovered which has remained beyond remedy.

Now let us turn to the second class of *a priori* objections. They are advanced by the heirs to the Aristotelian doctrine that "everything in nature takes place for the sake of an end." It is not easy to determine just how broad and just how narrow was the 'nature' contemplated by Aristotle, nor yet to what extent things taking place for the sake of an end were also, in his view, parts of a mechanism. But in the sequel the possession of a nature that could be defined in the terms of the end sought and "always or for the most part" attained, was frequently enough supposed to demonstrate the inadequacy of mechanical explanation. Thus Aquinas: "We see that certain things lacking perception, sci. natural bodies, act for the sake of an end. . . But things which have no perception can only tend toward an end if directed by a conscious and intelligent being. Therefore there is an intelligence, by which all natural things are ordered to an end."[1]

[1] *Summa theol.*, I, quæst. 2, art. 3.

The most significant modern representative of the point of view which Aristotle sought to make final is the science of biology. It was in this field, it will be remembered, that Kant imagined the demonstration of the inadequacy of mechanism to be complete. "It is quite certain," he writes, "that we can never adequately know, still less explain, organisms and their intrinsic possibility in terms of the purely mechanical principles of nature. It is so certain, indeed, that it is an absurdity for men even to make the attempt, or to hope that another Newton may arise who could make so much as the production of a blade of grass intelligible in terms of natural laws that are not directed by a purpose. An insight of this kind must be absolutely denied us."

Perhaps the most helpful way of studying the present attitude of biology toward this question is to sketch its recent history, or at least a typical phase of that history. There is nothing more characteristic of the mechanical ideal in its practical working out than the effort to divide the larger bodies with which our experience presents us into spatial parts, to accord to these parts as few attributes as possible, then to seek to reconstruct the original body out of these *primordia rerum*. In biology the structure that first suggested itself as a convenient unit of composition was the cell, and the method which considered the cell to be related to the organism as the Democritian atom is related to the body composed of such atoms has been called the 'cell theory.' The distinct formulation of the cell theory goes back to Schleiden and Schwann. In 1838 Schleiden, confining his attention to plants, writes: "Each cell leads a double life, an independent one pertaining to its own development alone, and another incidental in so far as it has become an integral part of the plant." In 1839 Schwann extends the concept to all organisms: "Each cell is within certain limits an individual and independent whole. The vital phenomena of one are repeated entirely or in part in all the rest. These individuals, however, are not arranged side by side as an aggregate, but so operate together in a manner unknown to us as to produce an harmonious whole."[1] And again, "The

[1] Taken from Whitman, "Inadequacy of the Cell Theory of Development," *Journal of Morphology*, Vol. viii, pp. 639 ff.

whole organism subsists only by means of the reciprocal action of the single elementary parts."

Except for an occasional vagueness, such as the reference to "an harmonious whole," and except for the substitution of the 'life' of a cell for the mere 'existence' of an atom, the preceding description might have served Newton to depict the anatomy and physiology of all physical bodies, merely changing 'cell' into 'atom.'

Of course, the cell theory is not yet mechanical, since it merely assumes the living cell, and in connection with it implies terms of description and explanation that are not immediately susceptible of mechanical definition, nor even of physico-chemical definition. Yet since the phenomena of cell life are to a much greater extent capable of a physico-chemical treatment than those of the organism as a whole, it is natural that the cell theory should be looked upon by those who defend it, as well as by those who oppose it, as an effort in the direction of mechanical explanation, and that it should seem to an onlooker that a biology which found itself to be drifting away from the cell theory had abandoned the hope of mechanical explanation in its field. That biology is taking this course is the view of some of its most prominent representatives.

The writers in question, differing as they do on points of detail, are at least agreed on this proposition: That we know no laws of the individual cell or of the interaction of cells such as would explain the behavior of that aggregate of cells we call an organism. Some, at least, of the laws of the organism must treat it as indivisible. A favorite figure of those who take this standpoint,—the "organism standpoint," as Whitman calls it,—is borrowed from chemistry. "It can be shown, I think," says Morgan, "with some probability, that the forming organism is of such a kind that we can better understand its action when we consider it as a whole and not simply as the sum of a vast number of smaller elements. To draw . . . a rough parallel; just as the properties of sugar are peculiar to the molecule and cannot be accounted for as the sum total of the properties of the atoms of carbon, hydrogen, and oxygen of which the molecule is

made up, so the properties of the organism are connected with its whole organization and are not simply those of its individual cells, or lower units."[1] So Whitman compares the organism of many cells to a complex molecule. "The complex unit bears not only the structure of its individual parts, but also a totally new structure formed by the union of these parts."[2]

The concrete facts which these statements are intended to summarize are these:

1. The relation between two structures which the biologist calls 'homology,' may exist between a unicellular and a multicellular body. "So far as homology is concerned, the existence of cells may be ignored."[3]

2. In the process of development a unicellular organ may replace in one organism a multicellular organ in another. The laws of growth of an organism must be formulated in terms of the organism as a whole, and not in terms of its cells, if we are to have "continuity of organization." "Continuity of organization means only that a definite structure foundation must be taken as the starting-point of each organism, and that the organism is not multiplied by cell division but rather continued as an individuality through all the stages of transformation and subdivision in the cells."[4]

3. The important phenomena of regeneration.

(*a*) The phenomena of 'polarity.' "We find that a piece of a bilateral animal regenerates a new anterior end from the part that lay nearer to the anterior end of the original animal, a new right side from the part that was nearest the original right side, and a new dorsal part from the region that lay near the original dorsal part, etc." Since the character of the cells constituting the two surfaces of a single section cannot greatly differ, the nature of the growth on them must be due to the "structural relation of each to the whole to which each belongs."[5]

(*b*) The phenomena of growth. For example, in the growth

[1] *Regeneration*, p. 278.
[2] Whitman, *loc. cit.*, p. 641.
[3] *Ibid.*, p. 645.
[4] *Ibid.*, p. 646.
[5] Morgan, *loc. cit.*, p. 280.

of the tail of a fish after an oblique section, that part is found to grow the faster which has the greater growth to accomplish before it recovers its normal proportion to the other dimensions of the original. "These results show very clearly that in some way the development of the typical form of the tail influences the rate of growth at different points. Although the physiological conditions would seem to admit the maximum rate of growth over the entire cut-edge, this only takes place in those parts that give the new tail its characteristic form."[1]

So much for the organism standpoint and the concrete facts upon which it is based. Whether it does or does not present an obstacle to the realization of a mechanical ideal, depends upon the way in which it is interpreted, and, so far as I can discover, three constructions have been put upon it.

1. The cell being unsuitable to serve as a biological element which, itself without organization, produces an organism by division, combination, and interaction, a smaller unit is sought. "If the formative processes cannot be referred to cell division, to what can they be referred? . . . The answer to our question . . . will find the secret of organization, growth, and development not in cell formation, but in those ultimate elements of living matter for which *idiosomes* seems to me an appropriate name. What these idiosomes are . . . is the problem."[2] Such an outcome means that the organization standpoint is far from being a step away from the mechanical ideal; instead of posing the problem of physico-chemical explanation when analysis has been carried as far back as the cell, the whole discussion is postponed until we have arrived at the 'idiosome.' So understood, the organization standpoint means to correct, not the ideal of a biological unit, but the identification of the cell with that unit.

2. A second point of view is that defined latterly by Driesch, to whom the phenomena which we have referred to as organic appeal with particular force. The laws of regeneration and growth are not to be found in the properties of the cell, nor of any smaller organic element, nor of the inorganic constituents of

[1] *Op. cit.*, p. 133.
[2] Whitman, *loc. cit.*, p. 657.

organic matter. They "do not fall within any type of law known to the inorganic sciences, but require us to assume a new, peculiar, and peculiarly evidenced kind of elementary (that is, not further analyzable) law, and this necessity results from the fact that no physico-chemical mechanism can be imagined by means of which the phenomena in question can be reproduced."[1] The observations upon which Driesch bases so important a conclusion are not particularly recondite. Organisms can be found which have the following properties: (1) from any part the whole may be regenerated; (2) any part can be made to yield any part of the regenerated whole.[2] These characteristics give rise to two reflections. In the first place, the phenomenon of regeneration here studied cannot be subsumed under physico-chemical laws. For, observe the regeneration of any segment; at some point of the segment differentiation begins. If we are to explain the process in physico-chemical terms, either this point must differ in physico-chemical structure from its neighbors, or it must be differently stimulated from without. But the latter alternative is easily excluded by experimental control. Nor can the former be true, since any neighboring point could have been made the seat of differentiation by properly choosing the site of section. In the second place, the laws which the process of regeneration actually does obey are not mechanical, as may be seen from the following analysis of them.

Suppose we were given the problem to predict the point at which differentiation would occur in a given case. What data should we need, and what type of formula should we make use of? We should have to know (1) the type of organism to which the experimental fragment belonged, (2) the stage of the growth of each part operated upon, and (3) the site of the operation. We may, I take it, conceive the first datum to be given as a system of ratios, each point in the organism being characterized by the ratios of its distance from certain determinate points (say the poles of the axis or axes of symmetry). Such ratios are

[1] Driesch, "Die Lokalisation morphogenetischer Vorgänge," *Archiv f. Entwickelungsmechanik der Organismen*, Vol. viii, p. 99.

[2] To both of these statements there are obvious limits, which, however, do not affect the present discussion. Cf. *loc. cit.*, p. 72 f.

obviously independent of the absolute size of the mature organism, or of any other peculiarity of the individual case experimented upon. The second datum is given in the same way, though, unlike the first, it depends on time as a variable, or at least upon the typical ratio of the time taken to acquire a given form to the time taken to attain the typical form represented in (1). For any given experimental case data (1) and (2) are evidently of the nature of fixed parameters, and the point of differentiation will depend on (3), the site of the operation, as the only variable. We may readily imagine the working out of the formula in an illustrative case. Suppose the segment resulting from the experimental operation were a tube, and that the first differentiation "necessary to pass from this form to the type-form (1)" were recognized to be a constriction of the tube, we may imagine that our formula would yield us a coefficient dependent upon (1) and (2) and an absolute dimension, say the length of the single axis of symmetry from section to section determined by (3). We should then locate the constriction at a distance from one pole of the axis equal to a fractional part of the whole length of the axis, the value of this fraction being the coefficient calculated from the formula.

A science which makes use of such formulæ as the foregoing must be, in Driesch's opinion, *sui generis*.

There are many points in Driesch's article that would make interesting topics for discussion, *e. g.*, his conception of the 'type' as the 'end' of regeneration and growth, to attain which a given differentiation is 'necessary'; but the whole concept of end and of necessary means is better left for another occasion when it may be given fuller treatment. For the present, we may content ourselves with examining the two main theses of the argument as now explained. The first maintained that whatever the laws determining differentiation might be, they could not be physico-chemical; the second supposed itself in possession of these laws, and pointed out that they were not physico-chemical.

As to the first, let it be admitted that there is no difference definable in physico-chemical terms between the point at which

differentiation takes place and its fellows. There is yet a difference definable in geometrical terms, and with this must come a difference in the kind of stimuli affecting the point.[1] A somewhat analogous case is presented in the phenomenon of magnetization. Any point of a soft iron core may be made a pole by properly sectioning the piece, yet the piece of iron is physico-chemically homogeneous and we select a constant magnetic field. It is exactly its geometrical peculiarity that differentiates the physical conditions at this point from those that exist at neighboring points.

The second consideration points to the laws that determine differentiation, and shows that they are not physico-chemical in their nature. The chief distinction is that these laws state the processes that take place at one point to be a function of its geometrical relation to other remote points, making no mention of the structures that are located between these points.[2] In the fact that the laws of biology do neglect certain details, I think that Driesch has put his finger on that which characterizes biology as a science, and the peculiar way in which this elimination is effected ought to serve as a definition of this science. But the fact that by a process of elimination we can obtain laws in which new kinds of data are demanded, new kinds of formulæ used, does not mean that we have a new science, or, in the terminology of this article, does not show that we have introduced a new dimension. Nothing is more common in the handling of purely mechanical problems than to effect just this kind of elimination. Thus, to take one case, by calling approximately rigid connections absolutely rigid, we are able in mechanical systems to 'eliminate' coördinates, that is, to neglect detail. As a result of this elimination, we frequently obtain formulæ which introduce new terms. The law, "the work we can get out of a machine is equal to the work we put into it," is such a formula, and can be

[1] We here accept Driesch's contention that the stimulation of a point by its neighbors is as much to be accounted stimulus (as opposed to structure) as is the stimulation from causes quite independent of the organism.

[2] This I take to be the chief outcome of Driesch's demonstration of vitalism. His use of the concept 'action at a distance' is a help to the imagination to which the author is entitled if he be not confused thereby, and I see no evidence that Driesch has attached any undue importance to the device.

applied in practice to the measure of internal work without considering at all the construction of the machine.

In a word, Driesch does not show physico-chemical explanation to be impossible in the field of biology, and does not convince us that the formulæ here used are other than such as would result from eliminating detail in the physico-chemical process, after a fashion that is perfectly familiar to us.

3. The foregoing criticism of Driesch may be taken as a fitting introduction to the third interpretation of the organism view,—the one which, so far as the present writer has observed, is the most common among the biologists of the day. This view admits the existence of laws peculiar to biology, making it for the present an independent science in the sense that no knowledge of the physics and chemistry of the cell or of any other unit will enable us to replace these laws in the business of prediction. But though these laws may at present be indispensable and irreducible, though they may be permanently true and useful, the establishment of their existence cannot constitute a 'demonstration' of the vitalistic standpoint in the sense urged by Driesch. In spite of the absence of a physico-chemical explanation of such phenomena, is there any reason to suppose such an explanation to be impossible? Morgan sums up the data upon which we can base an answer, as follows. (1) The action of poisons, the formation of galls, the effect of lithium salts (Herbst), changes due to light, gravity, contact, etc., are best understood from the physico-chemical standpoint. (2) The effect of 'internal' factors is less easily brought under this point of view. Thus the growth of an egg "we find difficult, if not impossible, to attribute to external causes, yet . . . the first steps through which this takes place can be referred to physico-causal principles. These are the separation of the piece from the whole; the change of the unsymmetrical piece into a symmetrical one, brought about, in part at least, by contractile phenomena in the piece, aided, no doubt, in some cases by surface tension, etc. . . . We find here the beginning of a physico-causal change, and . . . we have no reason to suppose that at one step in the process this passes into the vitalistic causal principle." Having insisted upon the present

impossibility of offering a complete physico-chemical explanation, the author concludes: "Shall we, therefore, call ourselves vitalists? . . . I see no ground for accepting a vitalistic principle that is not a physico-causal one, but perhaps a different one from any known at present to the physicist or chemist."[1]

The preceding sketch of a certain phase of development in biological science has been given in the belief that it is here, if anywhere in experience, that we must look for facts that promise ultimately to resist mechanical explanation. If such facts were unanimously urged by the leading biologists of the day, one would still accept their conclusion with caution, realizing how difficult it would be to form an opinion as to what is 'ultimately' possible and impossible. But as it is, the weight of technical opinion, and of that branch of technical opinion which is most impressed with the error of certain hasty steps leading too directly toward the *quasi*-mechanical theory of life processes,— the weight of this opinion will recognize neither a 'demonstration' nor a balance of probability in favor of the failure of the mechanical ideal. If a layman may venture to estimate the best biological opinion, it would sum up to this: Laws which are not mechanical, such as those having reference to ends (Pflüger and Wolff), and those employing concepts like *actio in distans* (Driesch), are valuable in biology and make prediction possible where it would not be possible if we were to confine ourselves to mechanical terms; but this value is either temporary, while we await a better mechanical insight (Haacke), or if permanent, it is in the nature of an economic device. In any case, the existence of non-mechanical laws does not excuse us from the search for more elementary mechanical laws; still less does it give an assurance that such a search must remain permanently unsuccessful.

The writer has advanced the opinion that if the inadequacy of the mechanical ideal cannot be demonstrated from those aspects of nature studied by the biologist, then in no other region of experience can we expect to find such a demonstration. This opinion must be left for the present as a conjecture based on experience; the present paper does not pretend to have exhausted

[1] *Loc. cit.*, pp. 285 ff.

all the historical motives that have led thinkers to oppose the mechanical ideal. For example, it takes no account of the large body of opinion which opposes to the mechanical, not another kind of law (teleological, vitalistic), but the alternative of no law at all. In some of its aspects the doctrine of *liber arbitrium* would have to be so interpreted.[1] But these more general problems would carry us beyond the regions we could profitably discuss in brief space. We must, then, be content with the best example of opposition to a mechanical ideal with which history presents us, and pass on to a new question. If, namely, we can find in experience no obstacle to our progress in the direction indicated by the mechanical ideal, can we find any reason for supposing this progress to be necessarily continuous? Or, again, if we were to attain the goal defined, should we have reached the final solution of the problem of explanation? In a word, if there is no justification in present knowledge for predicting the failure of the mechanical ideal, is there any safer ground for predicting its success? But this chapter of the discussion must, as has been said, be reserved for a future occasion.

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[1] Perhaps the standpoint taken by Renouvier and Piat in their *Nouvelle monadologie* may be taken as giving the most systematic presentation. On this see the author, PHILOSOPHICAL REVIEW, Vol. viii, pp. 638 f.

PURPOSE AS LOGICAL CATEGORY.[1]

THE category of purpose, after having fallen into discredit for a long time, has begun recently to reassert its right to a central place in philosophical theories and discussions. There is, however, an important difference between the old teleology and the new. The former view endeavored to interpret the world in the light of some objective purpose, which was regarded either as immanent in the world, or as having a transcendent existence in the mind of God. The new teleology, on the other hand, is subjective and individual in character, and maintains that in the needs and ends of our personal lives we find the only possible key to the interpretation and evaluation of reality. It is thus, as has sometimes been observed, essentially in harmony with that modern spirit which, as a foe to all absolutism, refuses allegiance to external standards, and judges everything in accordance with its bearing on human life and human interests.

There is nothing essentially new in principle, I think, in this general tendency of current thought. There is much in the doctrine that connects it with Fichte, and still more closely with Positivism, and with many forms of the neo-Kantianism of our own day. During the last dozen years or so, the theory has been advanced from many sides, apparently worked out from different standpoints, and with a correspondent diversity in its emphasis upon particular points. Mach, Karl Pearson, and many others who draw their material primarily from the physical sciences, agree with those who have approached the matter from the standpoint of philosophy and psychology in regarding thought as instrumental in character, and subordinate to the practical ends of human will. Professor James has expounded the doctrine in a number of essays, bringing into popular use the term 'Pragmatism' proposed some twenty-five years ago by Mr. C. S. Peirce. In the hands of Professor Dewey and those associated with him at the University of Chicago, the position has been much

[1] Read before the American Philosophical Association, Princeton, N. J., December 29, 1903.

strengthened and elaborated by being brought into connection with the general standpoint of evolutionary science. It thus appears as a comprehensive theory of experience, in the form of a genetic and evolutionary psychology that furnishes the general standpoint from which the problems of logic, ethics, and the other philosophical disciplines are to be worked out in a systematic way. Whatever one's final judgment may be, one cannot fail to receive intellectual stimulus and suggestion from this new movement, or to recognize the strength and persuasiveness of the exposition and illustration that it has received at Professor Dewey's hands.[1]

I.

The general theses of the current teleological doctrines have been so often set forth that it is not necessary for me to attempt here any extended summary. Their fundamental postulates or principles may perhaps be stated in the following way: Thought is a particular function or activity within experience, not the universal form or constituent element of conscious life. It is always instrumental in character, having for its object the discovery of ways in which the purposes and needs of the practical life can be realized in action. It is thus always determined by its relation to a specific situation and to a definite problem. Moreover, its standard of success and test of adequacy is found in the practical success which it achieves. From this it follows, negatively, that thought has no ontological reference beyond experience. It is not its business to know or define a reality in any sense outside or independent of the experience of the individual. As a reconstructive function of experience, it necessarily works within

[1] As I do not intend in what follows to refer specifically to this position, though I have attempted to consider the principles that underlie it, a word in criticism of a general tendency that seems to be present in many if not all of its advocates may perhaps be allowed. What I refer to is probably a natural expression on the part of these writers of their enthusiastic belief and confidence in the novelty, importance, and all-inclusiveness of the method they are pursuing. It results, however, in a tendency to appropriate, as something peculiar to their own position, principles and insights that have long been common property, and thus to leave on the reader's mind an impression of hastiness or lack of accurate historical knowledge. The same unfortunate impression is also produced by the impatience shown in dealing with the views of others that leads these writers occasionally to anathematize their opponents as 'belated, prehistoric, anti-evolutionary ontologists.'

the limits that the latter sets, and in the service of the practical ends to which it gives rise.

These propositions are supported by various lines of argument. The obvious use and importance of knowledge for practical purposes, the historical fact that the sciences have grown up in response to practical necessities, and the close and essential connection between idea and action in the psychological life, are all brought forward by various writers. In addition, however, there are two lines of argument adduced that seem still more significant. In the first place, the purposive or teleological view is sustained by regarding thought as a function of life in general, which in itself sets no new ends, but appears upon the scene as a favorable variation in the service of ends already present, and can therefore be treated in analogy with the other functions of life. And, secondly, the supposed difficulties of the ontological or absolute view are made to furnish indirect or negative support to this position. For this new view of thought avoids, it is claimed, the insuperable difficulties and inevitable contradictions of any theory that assumes that thought has to know a transcendent object. Quite apart from the impossibility of understanding how thought could ever set itself such a task, the ontological view, it is claimed, affords no possible test of success or failure in its performance. 'No bell rings,' as Professor James graphically puts it, as a signal that thought has reached its goal.

When we turn to examine these arguments, we must say that at least those first enumerated do not seem conclusive, even if we accept them in the form in which they are commonly stated. That knowledge is actually employed as a guide of life, does not imply that this is its sole or even its chief function. It would be equally cogent to argue that the practical activities exist only as means to knowledge, since we do frequently find them employed in this service. Nor, in the second place, does the close psychological connection of idea and action require us to conclude that the former is subordinated to the latter. The process of knowing, as has often been pointed out, involves will and purpose in the form of interest, attention, and selection; but this is not a complete description of the psychological situation. In any genuine case of knowing,

there must also be present an objective interest, a detachment from the personal and private ends of our will, in order to permit the true end of knowledge to be realized. The facts of experience, then, when we look at all sides, seem to show that ideational life is not defined or determined by any merely individual end. Instead of separating the ideational and the volitional elements of experience, or reducing one to terms of the other, the facts of the case compel us rather to recognize them as distinguishable, though not distinct, moments in the total attitude of the self toward reality.

In the third place, it does not follow, even if we grant the premise, that because the sciences have been developed through the stimulus of practical needs, they have therefore no further aim or significance. In accordance with what Wundt calls the heterogony of ends, we may suppose that the process of development has brought into view in more highly evolved forms of conscious life a different end, — that of knowledge, — which may now be of supreme importance. Apart from this, however, the premise of the argument may well be questioned. In the early history of both the individual and the race, practical interests and needs are doubtless most insistent and absorbing, and largely dominate the life. Freedom from the most pressing needs of life is certainly essential to any progress in science. But it is doubtful if it is permissible to assume that the disinterested impulse toward knowledge is entirely absent at any stage of human consciousness.[1]

II.

However confidently we may turn aside these commonplace ripples of argument, we cannot forget that there are two great waves still to be faced. To meet these we shall find it necessary to lay our course on the open sea with philosophical exactness, and to put our craft in the best possible condition to meet the shock.

[1] It has been the fashion in recent genetic studies to emphasize the dependence of the theoretical on the practical. But there are many facts in early forms of consciousness that are plainly expressions of a genuine wonder, — real intellectual curiosity, though of course in an undeveloped form, — that conditions in various ways the so-called practical activities.

The argument from biological analogy professedly carries with it the full authority and weight of current evolutionary science. It points out that the idea, like everything else, is developed as a necessary function within experience. The idea, it is said, comes in response to a definite demand for 'readjustment and expansion in the ends and means of life.' It thus works in the service of life, having for its object to readjust habits in the light of new situations, to loosen tensions that arise within experience, and, in general, to quiet uneasiness, restlessness, and pain. Now, it is to be noted that, if thought is to be regarded as analogous to other functions of life, it cannot be taken as setting any new ends of its own that are independent of the ends of the life of the organism in which it has arisen. The problems that it is called to solve are never theoretical problems, difficulties set by the intellect itself. For if this were the case, the biological view of thought would be completely out of court; for thinking would be no longer merely performing the task prescribed by the organism, or by unreflective experience, but seeking to realize an end which is quite different in character.

This point requires to be carefully noted; for just here, as we shall see more explicitly hereafter, serious ambiguity arises in the use that is made of terms like 'practical,' and 'the demands of life.' It is surely clear that one cannot blow hot and cold at the same time, and that from the standpoint of the present argument 'practical ends' must be limited to those which belong to the organism, or which are in some sense antecedent to thought. If thought sets any ends of its own and works for their realization, it is surely clear that it cannot be regarded as a particular function of life, and treated as analogous to the other biological functions.

The whole point at issue here, then, is whether thought can be adequately described as a particular function of experience. When we take the external point of view, looking at the psychophysical individual as an object of scientific investigation, we can only construe thought in this way, and such an interpretation has a certain truth, — it may be that this is the only truth about thought that biological science is able to furnish. But philosophy, as the

science of experience, occupies a different view-point from that of the special sciences. It looks at experience from within, not as an object, or a collection of objects, but in its immediate relations to the knowing and willing subject. Now, from this point of view, the thought function is seen to be central and constitutive, not an external process of reflection superinduced upon life or experience. The dualism that is implied between the ideational process and a life of habit or feeling, or of immediate values, has no real existence, but results from the abstraction that is forced upon us when we look at experience from the outside. From the internal view-point of self-consciousness, however, thought, — not as an abstract reflective principle, but as the concrete and self-conscious attitude of the self, which includes will and purpose as an essential moment of its own life, — thought, in this sense, is seen to be the central principle that gives to experience its significance and its possibility of interpretation.

In the light of this position it would seem to follow that the so-called 'practical' ends can never be final or independent ends for a rational being. They only find a place *within* such a life by being included as means within the ultimate ends or ideals in which the self expresses the unity and completness of its own life. In the realization of a string or series of particular purposes that are not subordinated to an ultimate end, there can be no true self-expression or self-realization.

We have at length come to consider the indirect support that the instrumental view of knowledge receives through the alleged incapacity of all ontological systems to explain how thought can deal with a reality that in any sense transcends experience. There is no test of thought, it is urged, but the practical test of success as shown by trial and experience itself. Reality as an ontological system, eternally complete and finished, and thus contrasted with the incompleteness and growing adequacy of our experience, is an unmeaning abstraction, something that does not function at all in our thought and is dumb to our successes or failures.

I certainly cannot escape the conviction that those who put their objections in this form have not understood the position of their opponents. Everyone would admit that there is no external test of truth, and that the standard must be found within experience itself. But the question recurs: What is the nature of experience? And it is in the reading or interpretation of experience that many idealists take issue with those whose arguments we are examining. If, as the latter maintain, the experience of the individual, in its essential nature, is isolated and detached as a finite phenomenon, if the nature of a larger whole does not function constitutively within it in the form of universal principles, then *all* tests of truth are impossible, practical tests no less than theoretical, as I shall presently show. But if (as I have always understood idealists to maintain) experience by its very nature involves a reference to reality, the case is not so hopeless. For then the reality which is taken as a standard is not external, but functions as an immanent principle within experience. It does not, however, fall wholly within any individual experience, but exists as the extension and supplementation that individual experience seeks and demands. It is this relation of individual thought to the reality that is at once continuous with it and also its necessary complement and fulfilment, that finds expression within experience in the aspects of universality and necessity. These are not characteristics of ideas as such, nor is an idea made universal through the fact of its existence in all minds, but it only partakes of universality and necessity through being an element within an experience that has the nature of reality bound up with itself.

The objective or ontological view does not then have to undertake the impossible task, which its opponents would thrust upon it, of explaining how thought-in-itself can know reality-in-itself. There is no warrant whatever for identifying this form of idealism with the older representational theories of knowledge. The truth is that it was just this school of thought that first showed both the inadequacy of representationism, and the possibility of avoiding its difficulties by starting from a truer and more concrete view of experience. Thought, idealism points out, has no existence as something standing apart from reality; but, in Hegel's

graphic words, it is its very nature to shut us together with things. No bell then is necessary as a signal that our thought has touched reality; every real thought has some degree of truth, even although the proposition in which it is expressed may not be adequate to the expression of this truth. The real problem in any given case, therefore, is to determine which of two or more possible ways of judging about reality is truer and more adequate.

Here the appeal is to experience itself, but to experience as systematized by thought. It is to be noted, however, that the system to which we appeal is not a fixed circle of abstract ideas that have the power of determining truth through their own internal consistency. It is rather the concrete and fluid process of thinking, in which the nature of reality functions effectively, both as something already partially determined, and also as that which sets the ideal for further determination. As thus an active process of transformation directed towards the realization of an ideal, thought seeks to extend and supplement its present content. It looks before and after, and seeks guidance and direction from every quarter. To this end, it appeals to direct perceptive experence, and makes use of trial and experiment as its instruments. With the same object of broadening its outlook, it makes use of the opinions of other men, testing and correcting its own conclusions by the light which these results afford. Herder has well remarked that it is not without significance that the word *Vernunft* is derived from *Vernehmen*, to learn or give ear to. For reasoning involves, as one of its essential moments, a looking abroad and learning from every quarter, not in an attitude of passive receptivity, but with a mental alertness and selective attention that employs the whole process of experience as a means of realizing and fulfilling its own ideal.

For this view of reason we are indebted to the men who inaugurated the historical movement at the beginning of the nineteenth century. For the eighteenth century rationalists, reason was something limited and self-enclosed. That is, they commonly assumed that every normal person had only to look into his own consciousness to know what is reasonable. Reason was thus regarded as an infallible organon, which each individual car-

ried with him as a private possession, and which had the power to determine truth by means of the laws of formal consistency.

Now, in abandoning this abstract conception of thought or reason as a thing-in-itself, it is necessary to avoid the opposite error of resolving thought into a mere plurality of experiences, into consciousness of the result of movement, for example. For it is impossible to dispense with the functional reality of thought as a guiding and controlling principle. This principle is not merely regulative of experience, but constitutive as well; or, rather, we may say that it is constitutive just through the fact that it is regulative. In other words, thought, in its work of determining reality as a system, operates not only through retrospective categories, but possesses in a certain sense the power of prevision, and this prospective reference, as guiding purpose and ideal, operates effectively in building up the system of truth.

It is only when we take account of these facts that we can find any meaning in the conception of 'workability' as a test of truth. Those who emphasize the all-sufficiency of this practical standard, however, usually assume that it is a new principle come to supersede and destroy, not to fulfil, the claims of the older logical principles. At this point a little reflection will show that the conditions under which the practical test is applied presuppose logical thinking as their necessary framework and background. It may be said that the practical criterion of 'workability' merely asserts that the test of any present system of experience is the future experience that comes through trial and experiment. It means simply, it may be said, that present ideas must be tried by their future results. But we can maintain with equal reason that the *present* system of knowledge furnishes the standard by means of which we must judge of the future. This antinomy obviously has its source in the abstract separation of present and future experience. Instead of being external and independent centers that exercise authority from the one side or the other, future experience and present experience necessarily imply each other, the present looking forward to the future for its completion and correction, the future looking back to what is for it the past. Now, this reciprocal implication and determination of parts presupposes

that these parts are elements of a rationally coördinated system. It follows, therefore, that the so-called practical test that judges of the truth of an idea by its results, is applicable only when it is used within a rationally determined system of thoughts that contains as immanent ideal its own principles of criticism. (Everything works in some way, but the practical question always is, How does it work?)

Passing from this point, we may find that some further explanation and justification are still demanded of the proposition that thought is necessarily and organically connected with an objective reality. How is it possible, it may be asked, for reality to be at once both within and without an individual consciousness? It is impossible to deny that the consciousness of each person has an aspect of uniqueness, in virtue of which it may be said to be strictly self-enclosed and particular. But the facts of experience, impartially and comprehensively viewed, compel us to recognize another moment of mind as equally essential to its true individuality. This is expressed through the principles of universality and necessity, which are, as we have seen, marks of the functional efficiency of the objective ideal. This ideal, though a part of present experience, points always to a system of reality in which it is completely fulfilled and realized. Nevertheless, the fact that the objective world functions in individual consciousness as an *ideal*, does not exclude its reality either within our consciousness or without it. For the ideal and the real are continuous with each other, and complementary in nature, not separate and opposing modes of existence. It is the presence of reality as ideal in our consciousness, — not as something that is already attained, but as the mark to which we press forward, — that differentiates our thinking from the aimless play of subjective ideas.

This view, I venture to think, makes no impossible demands, and appeals to no questionable hypotheses. It appears to me to be simply a more complete and adequate reading of the facts of experience than that furnished by its opponents. The relation of the mind to reality, — to a world of things and persons, — is given with the very fact of conscious experience. If we find no difficulty in ascribing an objective reality, in the ontological sense, to

persons, — if we do not reduce our fellow men to functions within experience, — why should we pronounce it unmeaning to give the same kind of reality to things? Recent investigations into social and genetic psychology have emphasized in a striking way the fact that it is the very nature of the individual consciousness to transcend the limits of its own particularity, and unite with other individuals. This social relation, we say, is not external and accidental, but a real and constituent element in the life of the individual, the nature of the *Alter* being essentially involved and included in the nature of the *Ego*. Now, if we find no obstacle to prevent us from admitting the transcendence by the individual of the bounds of its particularity in this social connection, why should we make a difficulty in the case of objects in general? Our relations to persons are, indeed, more intimate and also more varied than are those in which we stand to things. Moreover, we may perhaps say in general that these relations continue to lose something in intimacy, variety, and emotional warmth, as we pass downwards through the various forms of organic life to the objects of inorganic nature. But there is no difference in principle between the mode in which we know persons and that in which we know things. Furthermore, we have also to admit that the feelings and emotions that seem distinctive of our attitude toward persons are not original, but have grown up through experience: persons are only gradually distinguished and classified by the child as different from other objects of the real world.

III.

I have thus attempted to examine the main arguments of those who interpret reality in terms of will and purpose, and to answer the objections that are most insistently urged against the older view. It now remains to indicate briefly the chief difficulties that seem to me inherent in this modern form of teleology. As these objections have been more or less explicitly anticipated in what precedes, I shall confine myself to a brief statement that will to some extent serve as a summary of my paper.[1]

[1] It is somewhat remarkable that those who uphold the teleological or instrumental view of knowledge have as yet devoted almost no attention to answering the serious and legitimate objections that have strongly urged against their position from many sides.

1. We have already had occasion to refer to the ambiguity that in this use attaches to the word 'practical,' as well as to the terms 'end' and 'purpose.' These words seem to be employed by this theory to cover two modes of consciousness that are usually, at least, regarded as essentially different. In some cases the 'practical' end for the realization of which thought acts as an instrument is material in character and involves physical movements; as, *e. g.*, to supply food, provide shelter, or in some way to minister to the needs of the physical organism. In other connections, however, the term 'practical purposes' is broadened to include intellectual interests and problems that concern only the relation of the thinking process to itself, and have no discoverable relation to biological needs or to physical movements. The employment of terms in this shifting sense seems to have resulted in a certain confusion of the issue, and to have led to a slurring over of one of the fundamental difficulties in the position. Moreover, the claim of the position to novelty depends to a very large extent upon its adoption of the narrower and more usual interpretation of what is to be regarded as a practical purpose. If these words are used to include the ends of knowledge, there is nothing essential gained, so far as I can see; the logical problem still remains, and here analogies with the course of biological evolution and arguments based on these analogies cannot help us.

2. From the standpoint of the position we have been examining, one cannot consistently speak of supplementing or broadening the individual standpoint by reference to social purposes. For, as we have seen, the recognition of other individuals, and of our own relation to them, requires the adoption of the transcendent and ontological position against which the instrumental view levels its heaviest artillery.

The instrumental view must, then, logically remain purely indi-

(cf., *e. g.*, James Seth, "The Utilitarian Estimate of Knowledge," PHILOSOPHICAL REVIEW, Vol. X, pp. 341 ff.; W. Caldwell, "Pragmatism," *Mind*, No. 36, pp. 433 ff.; B. Bosanquet, "Imitation and Selective Thinking," *Psych. Rev.*, X, pp. 404 ff.). The explanation of this is probably to be found in the belief that the further development of their principles affords the best answer to objections, and is at the present time of fundamental importance. Nevertheless, a fuller and clearer definition of the view is urgently demanded in the light of the criticism to which it has been lately subjected.

vidualistic. As such, it necessarily fails to do justice to the objective and universal aspect of experience. For a series of individual purposes, as a description of objective reality, is surely open to all the theoretical objections that have been so often urged against a series of subjective feelings; while, if taken seriously as a standpoint for ethics, the doctrine seems open to the gravest objections.

3. A string of individual purposes also fails to afford any unity to life and experience. But there is actually such a unity present, if not in realized form at least as ideal, in all rational life. We must conclude, then, that in maintaining that it is always in the light of particular definite purposes that experience must be interpreted, the instrumental view is emphasizing what in themselves are not true ends of thought at all, but only subordinate ends that find their meaning and place in rational experience from their relation to a universal and dominating end. Without the reference of the various practical purposes to the unity of such an end, experience would remain a chaotic assemblage of elements completely lacking true unity and consistency.[1]

4. In spite of the claim made by its advocates that this theory avoids dualism, it yet introduces a sharp opposition between immediate experience and the ideational process. This opposition does not seem to be warranted by an analysis of consciousness itself. On the one side, the theory seems to place experience or conscious life, consisting of feelings, impulsive and habitual reactions, and immediate appreciations of values. Out of this, as a ready-made prius, or an antecedently existing matrix, thought arises as a process of reflection, or a function of transformation and readjustment. Thought is thus necessary to the further development of experience, but it does not appear to be in any sense organic to it; for experience can apparently exist in independence of thought. Even when it is pointed out that thought arises *out of* experience, the difficulty is not fully met; for it comes, not as the development of a principle already immanent in, and constitutive of, the earlier stage, but as a variation, or *deus ex machina*, that introduces something entirely new. There is thus a departure, I think, from the procedure of the true evolutionary method.

[1] *Cf.* Bosanquet, *Psych. Rev.*, X, pp. 404 ff.

5. What I have already set down must stand at present as justification for the final statement of my paper, that the view of experience we have examined, instructive and valuable as it is in many of its aspects, is only valid in so far as it rests upon a logical and ontological basis that is quite different from that which it claims for itself. It seems to me that I have shown that, in several of its arguments at least, this theory does implicity rest upon such a basis. Even constructive thinkers do not always remember that the underlying principles of experience are not explicitly asserted in consciousness, as are particular facts, but rather are implicitly asserted or assumed. It is therefore easy, from the standpoint of common sense and natural science, to fail to recognize consciously a background that is all the while presupposed as the support which gives the facts of experience their meaning. If the 'instrumental' theory were to develop consistently its presuppositions, its claim to be an indedependent and self-sufficient method of philosophy would, in my judgment, at once appear as groundless and impossible.

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THE MEANING OF THE PSYCHICAL FROM THE POINT OF VIEW OF THE FUNCTIONAL PSYCHOLOGY.[1]

IN two papers previously read before this Association,[2] I have maintained that the distinction of the psychical and the physical represents simply a functional division of labor in the statement of experience. There is no such distinction, or it is inoperative (which amounts to the same thing), so long as experience flows on smoothly, so long as in the midst of our action we do not 'stop to think.' It is the purpose of the present paper to consider somewhat more closely the meaning of the psychical in relation to that process of tension in experience which we have defined as the condition of consciousness.

I.

With the advance of a science we naturally expect to find a reconstruction of the meaning of its fundamental concepts. This is true in psychology of the concept of the psychical. The most important recent advances in this science are those along the lines of genetic and social psychology. A genetic and functional mode of viewing experience has been taking a more and more prominent place in psychological discussions in the past few years, as contrasted with the analytic and structural, which still is the prevailing standpoint. By this is meant that experience is viewed as a process, with moments or functional phases, rather than as an entity or thing capable of analysis into structural elements or units. The structural analysis of experience is not denied value in its proper place, but, from the standpoint of method, it is shown to be instrumental to this functional view. Cross-sections of the process are taken at different points, and an analysis is made of the elements found in these cross-sections.

[1] Read in part before the American Philosophical Association, Princeton, N. J., December 30, 1903.

[2] Published in the PHILOSOPHICAL REVIEW, September, 1902, and May, 1903.

But the section and the analysis are ultimately for the sake of getting more efficient control of the process.

No one has made this clearer than Professor Royce in his critique of the doctrine of conscious elements in his recently published *Outlines of Psychology*. It is here shown that the element obtained by this analysis (for example, the sensation) is as much an artifact as is the atom in physical science. It is brought into existence as such for the first time in the act of analysis. Hence its only use is one similar to that of the atom in physics. It is a convenient tool in explaining the actual facts of the stream of consciousness. The justification of the whole range of analysis in the structural psychology can be found only in its methodological utility in explaining the concrete process of experience.

We may ask, then, how experience is viewed from the functional standpoint. From this point of view, experience is regarded primarily as a process. This is simply carrying over into psychology the general dynamic standpoint common to all science at the present time. By process here is meant activity, without specifying that it is either physical or psychical. The most fundamental statement that we can make about experience is that it is action. It is as much action when it is conscious as when it is unconscious, but the conditions of conscious action are different from the conditions of unconscious action.

What are the conditions of consciousness? What are the laws which determine when an act becomes conscious or ceases to be conscious? These are: the law of tension or obstruction in activity, and the law of habit or facilitation in coördination.

By the law of tension is meant simply this, that consciousness appears only when the process of action is relatively impeded or interrupted. Action is going on all the time, in tropism, reflex, and instinct. But these become consciously performed acts when there arises stress in adjustment, whether the focus of the tension be intra-organic or extra-organic.[1]

[1] Why there ever should be resistance or obstruction in action is an ultimate question here as much (and as little) as in physics. The Hegelian doubtless would say that pure spontaneity posits resistance as its own other. The evolutionist is apt to attribute it to the environment. But the scientific psychologist no more asserts that he

The whole of psychophysics is but an illustration of this law of tension. What is the significance of the determination of thresholds, of the lag of sensation behind stimulus, of the summation of stimuli in order to produce a given sensational effect, of the Weber-Fechner law, unless it is this, — that tension is the condition of consciousness, and that there can be no tension unless there is not only a tendency in the organism in one direction, but also an inhibitory tendency operating with reference to this in the opposite direction? Lag of sensation, or summation of stimuli (which are simply obverse sides of the same fact), represent the limits within which operates that tension which is the condition of consciousness. The Weber-Fechner law marks the working limits of this tension.

But why just this relation, it may be asked? Why this particular law, that sensation increases as the logarithm of the stimulus? It may be replied that investigation has shown that this ratio is not a constant one for all intensities of stimulus; the formula holds only for stimulations of moderate intensity. It does not hold for either maximal or minimal ranges of stimulation. Moreover, Heymans [1] has restated the law so that it reads simply that sensations increase in direct proportion to the increase of the stimulus. That is, if we rule out the influence of disturbing or inhibitory stimuli, the Fechner part of the statement of the law is not true, but only the original formulation of Weber, that the increase of sensation is proportional to the increase of intensity of the stimulus. The Fechner formulation holds only of a stimulus operating in the presence of innumerable other stimuli whose inhibitory effect upon the operation of this stimulus is thus roughly expressed.

The tension (and thus the consciousness) lasts as long as the dominance of the relevant stimulus over the competing stimuli.

has accounted for the presence of this element of opposition which polarizes consciousness than the biologist accounts for the principle of variation in evolution or the physicist for the collision of atoms which is one of his fundamental postulates. It may be that tension or opposition is a necessary implication of the idea of activity or process.

[1] "Untersuchungen über psychische Hemmung," *Z. f. Psych. u. Phys. der Sinnesorgane*, Bd. xxi, Heft 3, pp. 321–359; Bd. xxvi, Heft 5 u. 6, pp. 305–382. Cf. Stratton, *Experimental Psychology and Culture*, p. 13.

It ceases (and consciousness lapses or begins to lapse) as soon as it succumbs to these. This succumbing to these other stimuli is just what we mean by the facilitation of a coördination, the lapsing into an habitual mode of reaction. Differences of reaction-time mean differences in facilitation or habituation of organic circuits (sensorimotor coördinations). This marks the time limits of the tension, as psychophysics marks the limits of intensity and extensity.

The whole study of sensation in modern structural psychology, especially in psychophysics, is really a technical investigation of the nature and limits of this tension. Genetic psychology is a study of the types of experience within which tension arises and of the changes which one type of experience (such as instinct) undergoes in the process of the emergence of consciousness (in impulse), and its transformation into another type of experience (habit). The so-called functional psychology is simply an attempt to relate the results of both these forms of psychological investigation to the process of reconstruction of experience as a whole; it interprets structure in terms of function, and function in terms of the genesis and growth of structure.

Biology and psychology state the same tension, but in terms of different techniques. Both the psychologist and the neurologist state the tension in terms of action; but they start from such diverse standpoints and their technique and terminology (because of purely historical conditions) are so different, that we have a problem, or think we have a problem, of conflict between them which does not really exist, — the problem of the psychical and the physical, so transparently masqued in the current hypothesis of parallelism.

The relatively tensional phase of action is continuous with the relatively stable phases preceding and succeeding. There is no infringement of the law of conservation of energy. We simply have one name (the term 'consciousness' or 'psychical') for describing action when it is tensional, and another name (the term 'habit' or 'physical') when it is relatively stable.[1]

[1] Professor Ostwald ("The Philosophical Meaning of Energy," *International Quarterly*, June, 1903) is on the right track in attempting to fuse the ideas of 'psychical' and 'energy,' but he fails to distinguish the respective functions of these important aspects, the relatively stable and tensional phases of action.

The distinction is confessedly a practical or teleological one, a distinction which holds for the situation or problem only; but it is no less valid as a distinction because it is relative only to a given type of situation and only under a given set of conditions.

A contribution has recently been made to the understanding of this problem in a paper by Professor George H. Mead, on the "Definition of the Psychical," in the *University of Chicago Decennial Contributions to Philosophy and Education*, Volume I. According to Professor Mead, my experience, as I am at this moment experiencing it, the actual process of my being my present conscious self, is psychical. My feelings, ideas, volitions, as I now am having them, are psychical. But the moment I reflect upon these experiences as mine, as soon as I make this feeling or idea or volition the subject-matter (the object-matter) of my thought, it ceases as process and becomes content. It may become an ethical, an economic, a political, a scientific content, according to my purpose or interest in studying it. It may become a psychological content, *i. e.*, it may become a datum of the science of psychology. But if we use the term 'psychical' in describing this datum, we must recognize that this use of the term is a very different one from that indicated above. *We must distinguish the true psychical of immediate experience from the psychical as an object of psychological retrospection.*[1] The true psychical, according to Professor Mead, is the immediate fact of experienc*ing*. Any experience is psychical if, and in so far as, it is not the content of reflection, but at the time being experienced, *i. e.*, is the process of reflection itself. As soon as we turn back upon this experience to analyze it or to reflect upon it in any way, it ceases to be the process of my experience and becomes a content in my experience, a content treated either as something to be explained (in logical terms, the subject of the judgment) or as the explanation of something else (the predicate of the judgment). In order actually to explain this content or actually to use it in explanation of another content, there must, of course, be a new judgment; the process of experience must be resumed, it must become psychical again. This is the copula of

[1] Cf. Professor Baldwin's distinction between the 'psychic' and the 'psychological,' discussed below.

the judgment. *The psychical is the copula.* Thus experience grows out of one content into another content in and through the process — which is the psychical. New social, political, ethical, economic, æsthetic, scientific, philosophic, psychological values or contents are achieved only in and through psychical individuality. The psychical is experience as process, and psychology is the science of the content of experience with the reference to this process of reconstruction made explicit. As Külpe puts it, it is the dependence of facts of experience upon the experiencing process which makes them psychological data.

This thought is worked out from a different point of view by the late Professor Adamson in his *Development of Modern Philosophy*.[1] "Facts of mind, psychical states . . . can never be directly presented as objects." "When we describe the facts of mind as a series of events in time, we are vainly trying to regard them from the point of view of an outside observer. We are not describing them as they are for the consciousness they compose. There they are not objects *of* which the subject is aware, but ways *in* which he is aware. . . . It seems more true to say that the subject *is* his mental states than that he *has* them."[2]

Strangely enough, Professor Adamson makes this the basis for rejecting "the conception of psychology as a kind of natural science."[3] The truth would seem to be rather that this is just what furnishes the basis for conceiving psychology as a natural science, since if there can be no science of the psychical as such, psychology must deal with phenomena on the same level with the other natural sciences. We can have a science only of an objective content; in truth, content as such is by its very nature objective. The peculiarity of psychological science is simply the closeness of the reference of the content to the process from which it is an abstraction.

In psychology we treat one content as the means for getting another content. This involves reference to the mediation of one content by another, *i. e.*, it involves reference to the process

[1] Vol. II, chap. iv, "Psychology and Epistemology," especially pp. 56 f.
[2] Pp. 58–59.
[3] P. 60.

of the reconstruction of experience. We cannot directly state this process. To state it would be to stop it; it would convert process into content. The psychological is a good deal like the histological procedure in biology. You have to stop the dynamic life functioning and cut the specimen into thin sections, artificially distorted by hardening reagents and staining fluids, in order to analyze its structure. You have to kill it in order to state it. "Our meddling intellect misshapes the beauteous forms of things. It murders to dissect." Yet we recognize that there is a life process, and we attempt to interpret this structure in terms of its functional importance in carrying on that process.

Ultimately, every content, every datum of science, would have to be stated in terms of every other content, in terms of the data of every other science, before the scientific statement would be complete, and this would involve comparison of the contents in terms of their different degrees of mediation in experience; that is, it would involve reference to the process of experience, to the psychical. The content of physics or chemistry or biology, as truly as the content of psychology, would have to be brought back to this ultimate test (its availability or serviceability for getting further experience) before it could be said to be scientifically (philosophically) complete.

The distinctions between the sciences, in the last analysis, are only divisions of labor, and, thus viewed, we may even agree with a recent writer that "our mental life must be interpreted ultimately in relation to the physical world," that "the ideal psychology is a physiological psychology."[1] This does not mean that psychology reduces to the physiology of the nervous system, as the latter is ordinarily conceived. But it does mean that the data of psychology are as truly objective as those of any other science. Both psychology and physiology are ultimately a study of the reactions of the organism, and both must be brought back to the process of experience before their statements can be made wholly adequate. The difference is that this reference is more implicit and remote in physiology than in psychology. Psychology as a science is but one step removed,

[1] W. T. Marvin, *Introduction to Philosophy*, p. 176.

while physiology is two steps removed, from the process of experience. It is this difference in the remoteness of the reference to the psychical which constitutes the lines of division between the various sciences.

It is only recently that psychology has been generally conceded this place among the natural sciences. The concession has grudgingly been made, and many who by the logic of events have been forced to make the concession are not even yet willing to abide by all its implications. One of these implications is this fact that the data of psychology are as objective as those of any other science. As Professor Baldwin puts it in his latest book,[1] this concession means that the data of psychology are "viewed from the outside; that is, viewed as a definite set or series of phenomena . . . recognized as 'worth while' as any other facts in nature." "The occurrence of a psychological change in an animal is a fact in the same sense that the animal's process of digestion is." "For science all facts are equal."[2]

But many who would agree with Professor Baldwin on this point do not seem to realize that this necessitates a reconstruction of the very idea of psychology and of the psychical. Of psychology, because it has been supposed that the data of psychology are unique and that psychology on this account is fundamental to all the other sciences, while this view places it alongside of the other natural sciences with no special privileges. Of the psychical, because it has been supposed that psychology deals with the psychical as its datum, while on this view the data of psychology are objective and not subjective, are 'psychological' and not 'psychic,' to use Professor Baldwin's terms.[3]

[1] *Development and Evolution*, pp. 4 f.

[2] Whether Professor Baldwin consistently adheres to this point of view in his subsequent statements, is a question which has been discussed by the present writer in a review of the book in the *Journal of Comparative Neurology*, Vol. xiii, No. 4 (Dec., 1903).

[3] This would seem to be the thought expressed by Professor Royce and by Professor Münsterberg in the distinction between the world of 'appreciation' and the world of 'description.' There is no science of appreciation as such, because it is process and not content. The same thought is expressed also in the common statement of the impossibility of studying the feelings without transforming them. In studying them we make them objects of thought, and thus no longer process but content.

II.

Now what, from this point of view, is the true meaning of the psychical regarded as content and as the datum of psychology? We are accustomed to think of the psychical as belonging exclusively to the individual. We hear much concerning the impossibility of constructing a psychic series for other minds than our own, that no one can get beyond the pale of his own consciousness, that his own consciousness is the only consciousness of which he has any direct knowledge, and so on.

That there is a fallacy here somewhere has long been suspected, but it is difficult to lay one's finger upon the source of the error. A number of writers have insisted that introspection, strictly speaking, is an impossibility. Its validity has been called in question by such writers as Comte, Lange, and Maudsley. Others insist that all introspection is really retrospection, *i. e.*, not *intro*spection at all. But, it will be replied that, even if introspection does reduce to retrospection, we have in the latter an immediate type of experience differing from all other experience. Is this true?

If there were a perfect mirror at the end of the room in which I am sitting, and I had never tactually explored that end of the room, I should be unable to distinguish (visually) between the actual room and the reflected image of the room in the mirror. Suppose, as Gustav Spiller puts it, "I now shut my eyes, and redevelop the sight of the room. Does this image fundamentally differ from the object and the looking-glass picture?" "Except for unimportant circumstances, the primary and secondary visual worlds, or the visual worlds of sense and imagination, are one."[1] This certainly is in line with other similar explanations of psychic phenomena in physiological psychology. It is in harmony with the tendency in recent years to explain all images as simply prolonged after-images (more properly called after-sensations).

Now does not this suggest that what we call this unique, inner, immediate, direct, unsharable experience is, after all, arrived at as inferentially as any other experience, that there is no essential

[1] Spiller, *The Mind of Man*, p. 322.

difference in principle between the so-called external mirror and the internal mirror, that the image in the mirror of memory is not essentially different from the image in the looking-glass? The more will this appear to be true, when we recall the tendency in recent psychology to conceive of memory (Hering) and association (James) in terms of habit and in terms of physiological traces in the brain. In principle, as a mirror for reflecting objects, the brain does not differ from the silvered square of glass or from the photographic plate.

If, then, memory (retrospection) is essential to any introspection, and the brain (the organ of memory) does not differ essentially from the physical mirror, how do the reflected phenomena in one of these mirrors differ *in principle* from the reflected phenomena in the other?

Is this, perchance, the real solution of the old puzzle of subjective idealism? Is the distinction between the introspective world (the world of consciousness revealed through memory) and the external world, in the last analysis, simply another illustration of a self-made problem, — a problem arising out of the scientific abstraction of things that in reality (*i. e.*, in concrete experience) are not thus separated? And is this, perhaps, the core of meaning in the insistence by certain recent writers on the fact of 'inter-subjective intercourse' and the essentially social character of consciousness?

From this point of view there is no mysterious uniqueness about consciousness. A great deal has been written about the unsharability of consciousness. The statement has repeatedly been made that one can never really get into the mental life of another person, that one cannot get at another person's consciousness directly. But this is not in any sense a unique phenomenon in nature, if we take an organic view of the relation of the individual to society. The mere fact that, in the case of human beings, the so-called individuals are separated from one another by a certain distance in space, rather than constitute a colony or so-called compound individual, as in the case of the sponge, does not render it any less true that they really all form one organic whole. Society is an organism in the same

sense that the human body is an organism. "The cell, the individual, and the race, are merely units of different order in the world of living substance."[1] Individuals in human society are most of the time separated physically by inches (Siamese twins), by feet (members of the same family), by miles (friends and acquaintances), by a hemisphere (races on different sides of the globe). The individuals of a sponge are separated only by a cell-wall. In both cases the real biological connection is the reproductive nexus, the germinal substance. What is the fact of a micromillimeter or of a mile? If you could look at the body with a microscope of sufficient magnifying powers, it would be seen that its molecules are relatively as far apart as the different individuals which make up society. What we call the individual organism is a fragment arbitrarily torn from nature, a part distinguished simply for convenience from the rest of the universe. It is a scientific fiction, an abstraction from the whole. The individual organism, except for practical purposes, does not stop with the cuticle. At what point does the air that is breathed or the food that is eaten cease to be a part of the environment and become a part of the organism? Any line that you draw, from a scientific point of view, is an arbitrary line, a mere practical working device or make-shift in explanation of the facts (though not on that account any less valuable methodologically).

From this standpoint, the so-called individual simply represents a fragment of the whole universe, or, taking society as the true human individual, the so-called individual man would represent simply a member or organ of this greater (social) organism. Now if an adjustment is being made in the universe, and I happen to be in the focus of that adjustment (and myself, as a part of the whole, coöperating in that adjustment), then, of course, every other part of the universe, every other part of the great human organism (*i. e.*, every other individual in society) will be out of that focus, in the margin somewhere. And if consciousness is simply the process of the universe where and when it is tensional, then it is no marvel that no other part of the universe feels *this tension* just as I do. I *am* this tension, this focus of

[1] C. B. Davenport, *Psych. Rev.*, Nov., 1897, p. 673.

adjustment, and, as such, the whole system is represented there; the focus is the focussing *of* the entire system of the universe. (This is the infinite background of self-activity about which the idealists speak.) Each particular adjustment has but one point of highest tension (my consciousness), but there can be an infinite number of adjustments in the infinite system of the universe.

Now it is only this highest center of stress and strain that is not shared, and that is saying no more than that a thing is itself and not everything else. In a certain sense, it is true that everything is identical with everything else; but if it were absolutely identical with everything else, there would be just one 'Thing' in the universe; there would be no 'things.' Identity, so far from being inconsistent with diversity, is just the unity which runs through the diversity of things which make up the universe. To apply this to the question of consciousness, apart from the reservation just made, it simply is not true that another person cannot and does not share in my struggles. In many cases, indeed, where the individual organism seems to be in the focus of the adjustment, the real center of tension is outside. For example, a person is ill. *He* really may be suffering very little; the focal point may be in the consciousness of the friends. They suffer for him. If the focal point in that situation is there in the consciousness of those friends, it is not in the man who is ill, that is all! There cannot be two tensions unless there are two adjustments, two situations; and in that case, of course, there are two consciousnesses. Suppose that my tension did get over into yours somehow, then they would merge into one tension. If I ever did get a direct knowledge of your consciousness, then it would no longer be your consciousness but mine. This problem of the supposed uniqueness of the introspective consciousness is no greater than the problem of the uniqueness of every leaf and blade of grass in nature. Consciousness is not another realm of reality; it is simply the one world that we know in its process of reconstruction. The individual represents a node or nisus of energies.

Under the influence of the individualistic or introspective psychology, we have become so accustomed to regard consciousness as

the private possession of the individual, that we have failed fully to appreciate the very obvious fact that consciousness is essentially social in its nature, that there is such a thing as "inter-subjective intercourse," to use Professor Stout's term.[1] Perhaps its very obviousness has retarded insight into its significance, on the principle of what one writer has called the "illusion of the near." Consciousness is no more confined to the individual than is tension. It is focussed in the individual, but just as the so-called individual organism is simply one part of the greater human organism, so what we call individual consciousness is essentially social in character. It is focussed here and there in what we call individuals, but it is the focussing of the whole system.

The child is not introspective; he may almost be said at first to have no consciousness of his own, as is shown by his extreme suggestibility. So with the hypnotic patient. So with the consciousness of primitive man and of savages. Anthropologists tell us that in early stages of social evolution the individual is still merged in the tribe; his acts are the expression, not of any individual initiative, but of the tribal consciousness.[2]

But the essentially social character of consciousness can be shown even in terms of our modern highly differentiated and individualistic social life, for, after all, we are more social than we are individualistic. Let us take a concrete case. Here is a saintly mother and her profligate son. The wicked acts of the wayward son may not be focal in his own consciousness (focal morally, that is), but they may be keenly felt, with shame and sorrow, by the devoted mother. Often a person is more sensitive to slander directed against the good name of another person than if directed at himself. Persons who have grown into one

[1] Cf. his *Groundwork of Psychology*, Chap. xiv.

[2] It may be that consciousness began in this generic way, that, just as the human individual consciousness emerged by slow degrees out of a sort of group consciousness, so the lower forms of consciousness first represented the tensional stress of some life problem of the species rather than any specific crisis in the life of any so-called individual organism. And, ultimately, on this principle, mental life would have begun in one great cosmic throb of feeling or pulse of cognition. But, of course, all our ordinary categories break down when we attempt to state the origin of anything. The most that we can do is to analyze our experience as we find it nearest home in our human consciousness, and then extend the explanation as far as possible, on the principle of continuity, to the lower organisms.

another's lives in an intimate way frequently become so dependent each upon the other, that neither can long outlive the other. In such cases the psychological center of gravity of each, falls outside of himself, as it were, and within the life of the other.

It is an historical accident, one might say, that my consciousness is so peculiarly mine. It may be a sign of my limitation. Instead of being a mark of my superiority, it may be rather a sign of my unsociality. The real genius is not only a striking individual moulding his age; he is likewise a representative man, the product of his age. Extreme individuality or uniqueness we treat as a form of insanity. The perfect type of consciousness towards which the race is moving is one in which the individual will become increasingly more dependent, not less dependent, upon the social whole. One need only mention industrial organizations as illustrations of this tendency. Individuality is coming to be conceived, not as uniqueness, unlikeness, isolation, the possession of unsharable consciousness, but as the ability to bring to a focus the greatest range of social influences. Consciousness is the interaction of persons in society. *Con* + sciousness originally meant two-persons-knowing-together. Individuals are nodes, so to speak, in the social progress, pivots upon which (social) experience turns, *loci* into which consciousness converges and whence again it irradiates, finite centers of tension in adaptation whereby and wherein the universe is reconstructed. The psychical individual is the medium or channel in and through which experience is handed on from one member of society to another. Each member of society, from this point of view, is an organ of the social whole for thus transmitting experience. And psychology, from this point of view, "is the attempt to state in detail the machinery of the individual as the instrument and organ through which social action operates."[1]

III.

From this point of view, it will be instructive to criticize the views of certain writers who have written suggestively on the subject of the psychical and the physical in recent publications.

[1] "Significance of the Problem of Knowledge," *University of Chicago Contributions to Philosophy*, p. 19.

The view outlined above is consistent with certain arguments urged by Mr. Morton Prince[1] and by Professor C. A. Strong[2] concerning the relation between brain and consciousness, though not with the panpsychism which they base upon these arguments. The argument of Mr. Prince is as follows: Your brain state is a part of my experience; it is an object of my perception, not of yours. For you this brain state *is* consciousness; for me it is an object or process of change in what I call the material world, *i. e.*, in the objective world of my perception. "In other words, a mental state and these physical changes which are known in the objective world as neural undulations are one and the same thing, but the former is the actuality, the latter a mode by which it is presented to the consciousness of a second person."[3]

This seems to be a true statement of the relation between the psychical and the physical, except that it is difficult to see why the brain process, when thus experienced from within, should be called "the actuality," while the same brain process when viewed by a second person is only "the symbol of it." The focus of a system is no more real than the margin or context; each is essential to give the other its reality; in truth, each is necessary in order that the other should have any existence at all.

The problem of "how a subjective fact comes to be perceived as an objective fact; or how a feeling comes to be presented to us as a vibration"; *i. e.*, the problem of why the focus of this system appears as a marginal element in some other system, is a problem, to be sure. It is the fundamental problem of why Being is such as it is. But it is no more of a problem here than it is elsewhere. Why what is mental for me is physical for you, is no more of a problem than why the leaf on the tree is different from the blade of grass.

With Dr. Prince's statement that "there is only one process,"[4] and that that process, *as process*, is "psychical," we may fully agree; but this process has also a content, not only when viewed

[1] Summarized in the *Psych. Rev.*, Nov., 1903, pp. 650–658.
[2] In his book entitled *Why the Mind has a Body*.
[3] P. 651.
[4] P. 653.

by another person, but when introspectively (retrospectively) viewed by myself. Thus viewed *as content*, it is physical (it may be social, ethical, economic, psychological, etc.). It is not a different reality when viewed thus as content, any more than the context of a dynamic system is a different system from the focus. Why should we attempt to reduce the context to terms of the focus any more than the reverse? Why, that is, should we seek to reduce the physical to the psychical, as does Dr. Prince?

Dr. Prince's illustration of the kaleidoscope is admirably adapted to show, not the exclusive reality of the "wonderful variegated mosaic" seen within, but the reality equally of the "little pieces of colored glass thrown higgledy-piggledy together" which are seen from without. The one is as true and as real a view as the other. Why should we attempt to reduce what we see from the outside to terms exclusively of what we see on the inside?

Another interesting phase of the argument presented by Dr. Prince is that embodied in the following supposititious case, which is here modified slightly for the sake of simplification. Let us suppose two persons, by means of some X-ray appliance, to be perceiving each other's brain states. Then, according to the theory propounded by both Dr. Prince and Professor Strong, the reality is the consciousness which each has. The brain state which each perceives is simply a symbol of the reality in the consciousness of the other.

But now suppose, by some device, that one of these persons turns his instrument upon his own brain state. He still, on the theory propounded by these writers, would see only brain state. His own brain state, in this case, would likewise be only a symbol. But a symbol of what? A symbol of his own consciousness, of course. But, by hypothesis, this symbol is a part of his own consciousness.[1] The symbol must then be as real as his consciousness, which, according to Dr. Prince, is the only reality. Reality, then, includes both the psychical and the physical, both the consciousness and the brain state. How, then, can

[1] "That which we call the physical brain-process is my consciousness or perception of it." P. 652.

consciousness or the psychical be the only reality, *i. e.*, how can panpsychism be true?

Professor Strong uses the following illustration: Let us suppose that some future physiologist finds means "to isolate the brain and keep it artificially alive, and then, connecting his instruments with the stumps of the cerebral nerves, impart to them impulses so like those they have been accustomed to receive from the eye, the ear, and the skin that the brain's possessor . . . will see, hear, and feel like a normal person, and never know what had happened to him."[1] "We have only to suppose, after the laying-bare of the brain-tissue and the application of the hypermicroscope, an arrangement of mirrors to be brought to bear, in such wise as to reflect the light-rays traversing the microscope into the subject's eyes. This happy mortal would then . . . be simultaneously conscious of a feeling and of the accompanying brain event. This suggests a curious deduction. Suppose the feeling happened to be a perception, and the perception that of the very brain event in question; then mental state and correlated brain-event would apparently for that mind be fused into one."[2]

This "curious deduction," which Professor Strong rejects, would seem rather to be the true one. He rejects it on the ground that the object of perception always follows and is the effect of the consciousness in which it is a perception. In this case, he maintains that the brain state would be subsequent to the mental state, *i. e.*, to the consciousness of the brain state. But, waiving the question of the validity of psychical causality, and waiving the question of how the content could be temporally subsequent to the process of a perception, is not this an indefensible position even on the basis of his own theory of consciousness? He has at considerable length defended the doctrine that "consciousness is correlated, strictly speaking, with a process occupying the entire sensory-motor arc and extending from the sense-organs to the muscles."[3] How, then, in this instance, could one part of the organic circuit, or sensori-motor arc, be

[1] P. 41.
[2] Pp. 339-40.
[3] Pp. 46-47.

subsequent to another, if consciousness is correlated only with the whole circuit? How could my brain state, which, in this supposititious case, is the object of my perception, be subsequent to my consciousness of that brain state, if that consciousness is the correlate, not of any part, but only of the whole circuit, — not only of brain states, but of sense organs and muscles?

Of course, to have a complete perception of this brain state, it would be just as incumbent upon me to *touch* this cerebral tissue with the finger or dissecting needle as to *see* it with the retina and microscope. In this case, the two portions of the organic circuit (brain tissue and finger, let us say) would be immediately adjacent, and the illustration becomes even more suggestive, and the absurdity even more apparent, of supposing that the perceived object (the brain state) could be subsequent in time to the percipient subject.

The psychical and the physical, consciousness and brain state, thus are one, as Professor Strong says, but not in the sense that the brain state reduces to a mode of consciousness, not in the sense of panpsychism. Consciousness and brain state are one reality, but this reality is no more truly expressed in the consciousness than in the brain state, in panpsychism than in panphysicism. There is a difference between consciousness and brain state, but it is not the difference of one being more real than the other. It is the difference between that reality when in a tensional phase and when in a state of relative equilibrium. It is a distinction of function or meaning rather than of structure or existence.

Professor Royce, in his *Outlines of Psychology*, distinguishes between the physical (or 'public') and the psychical (or 'private') kinds of experience. "Physical facts are . . . 'public property,' patent to all properly equipped observers. . . But psychical facts are essentially 'private property,' existent for one alone." "The mental life of each one of us can be directly present, as a series of experienced facts, to one person only."[1] "The fact that other persons cannot directly watch our inner physiological processes, is itself something relatively accidental,

[1] P. 2.

dependent upon the limitations of the sense organs, or upon the defective instrumental devices, of those who watch us. But the fact that our mental states are incapable of observation by anybody but ourselves seems to be not an accidental, but an essential character of these mental states. Were physiologists better endowed with sense organs and with instruments of exact observation, we can, if we choose, conceive them as, by some now unknown device, coming to watch the very molecules of our brains; but we cannot conceive them, in any possible case, as observing from without our pains or our thoughts in the sense in which physical facts are observable. . . . No microscope could conceivably reveal them. To me alone would these states be known. And I should not see them from without; I should simply *find* them, or *be aware* of them. And what it is to find them, or to be aware of them, I alone can tell myself."[1]

In *The World and the Individual*,[2] Professor Royce suggests that the difference between the psychical and the physical is simply a difference in time-span, "that we have no right whatever to speak of really unconscious nature, but only of uncommunicative nature, or of nature whose mental processes go on at such different time-rates from ours that we cannot adjust ourselves to a live appreciation of their inward fluency."[3]

It may be pointed out, in the first place, that these two views of the relation between the psychical and the physical, are scarcely consistent. If the difference is simply one of time-span, then the two would seem to belong to a continuous series of phenomena, their difference being one of degree rather than of kind. The problem would here be as to why just this rather than that time-span is accompanied by the particular kind of consciousness which we know in ourselves. A very important point in the dynamic theory would be the determination of the temporal limits of the tension which is the condition of consciousness.

But, according to the view set forth in the *Outlines*, the difference is one of kind. "Mental life has thus been defined by

[1] Pp. 4–5.
[2] Vol. ii, pp. 211–242.
[3] *Ibid.*, pp. 22–56.

pointing out its contrast with all that is physical."[1] "How shall psychology progress, if, in our various mental lives, no two observers can ever take note of precisely the same facts?"[2] The answer finally is that "psychology is concerned with what is common to many or to all human minds,"[3] the position taken being the same as that of Professor Baldwin in his *Development and Evolution*, when he says that the data of psychology are psychological, not psychic. But, if this is true, then psychology is on no different basis methodologically from biology or physiology; they are equally objective sciences.

What, then, is the significance of this discussion of the psychical and the physical as 'private' and 'public,' respectively? The psychical as such is never the datum of psychology. Psychology is "concerned with what is common to many or to all human minds." But the only thing that is common or public is physical, not psychical. Hence, as a science, psychology no more deals with the psychical than does physics or biology. If by the psychical is meant my own private mental states, as Professor Royce insists at some length, then we are forced to one of two conclusions: either there can be no science of psychology (since there can be no science of the individual, of the particular), or the psychical is not the datum of psychology. But neither he nor we would be willing to accept either of these conclusions in this unqualified form. What is the truth in the matter?

The truth lies in seeing that this distinction between 'public' and 'private' is a functional, not a fixed one. A psychical fact is no more private than any other fact, except as it is taken as such; it is its being taken as such that makes it psychical. This Professor Royce has himself well illustrated in his critique of the doctrine of conscious elements already mentioned,[4] where he shows that the element or unit with which psychological analysis operates is not a preëxistent conscious state, but is brought into being in the act of analysis; the element *is* only as it is thus constructed. It is a fact only in the sense in which every scientific construct, such as the atom or the electron, is a fact.

[1] P. 5.
[2] *Ibid.*
[3] P. 17.
[4] Pp. 97 f.

'Public' and 'private' are relative or functional terms. There is no experience which is absolutely public or absolutely private. To recur to the illustration of the focus and marginal context, there is nothing which is absolutely focus and the rest context; it is a matter of the interest or purpose of the situation whether the focus be taken as a mathematical point, as a spot, or as a smaller within a larger area. This is more consistent with Professor Royce's statement that the distinction is "only a relative distinction due to the special conditions to which our human knowledge of both these worlds is subject."[1] The implication of this, as well as of much that he says in *The World and the Individual*, is that for a higher intelligence the psychical and the physical would be seen to be one, but that to our finite minds there are two worlds, an internal and an external, a private and a public, a psychical and a physical.

But it is just the contention of the functional view that these two are, under certain conditions, one in *our* experience as truly as in the experience of a transcendent intelligence. Psychical and physical are a unity in every act; the duality is the duality of consciousness, of thought. Of course, the unity of action is not a bare unity; it is a unity of the differences represented in consciousness. So, on the other hand, the duality or diversity of consciousness is not a bare diversity; it is a diversity, a duality, set up within the unity of action, and is thus itself a phase of activity.

Like Dr. Prince and Professor Strong, Professor Royce uses the illustration of the brain states. "Were my body as transparent as crystal, or could all my internal physical functions be viewed and studied as easily as one now observes a few small particles eddying in a glass of nearly clear water, my mental states could not even then be seen floating in my brain."[2] But let us suppose, as before, that I turned the instrument upon my own brain, and upon the very brain state concerned in my present state of consciousness. Here it would appear that this brain state is at once 'public' and 'private,' since it is at once a presentation in my consciousness and at the same time a neural state observable

[1] P. 2, note.
[2] P. 4.

by another. What, then, here becomes of the distinction between the psychical and the physical? If it be objected that the brain state as presented in my consciousness is not the consciousness of the brain state, that the content of perception is not the same as the process of perception itself, it may well be asked how a perception of a brain state would, in that case, differ from any other perception. It is just the content which makes one state of consciousness different from another state of consciousness.

The analysis of this supposititious case suggests two important conclusions: first, that consciousness is to be correlated with nothing less than a complete organic circuit, involving the whole context of external nature as truly as the internal mechanism of the nervous system; second, that the condition of consciousness is a certain tension within this system or organic circuit, and that where this is absent (as in the supposititious case, where the object of the perception, — the brain state, — is itself the organic circuit) the psychical and the physical merge, consciousness vanishes.

That the time-span is an important condition of consciousness is not only probable but demonstrable. Experimental psychology has for one of the chief objects of its investigation the measurement of the temporal limits of the organic tension which finds its expression in consciousness.

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WHAT IS ÆSTHETICS?

AN accomplished mathematician, who is certainly free from those prejudices which his science might be expected to foster, once said that all problems are divided into two classes, soluble questions, which are trivial, and important questions, which are insoluble. This epigram, if we chose for the moment to take it seriously, might help us to deal in a quick and trenchant fashion with the topic before us. Our problem would indeed be soluble and trivial, if we wished merely to fix the relation of an æsthetics arbitrarily defined to other sciences of our own delimination. It would be all a question of dragooning reality into a fresh verbal uniform. We should have on our hands, if we were successful, a regiment of ideal and non-existent sciences, to which we should be applying titles more or less preëmpted by actual human studies; but in its flawless articulation and symmetry our classification would absolve itself from any subservience to usage, and would ignore the historic grouping and genealogy of existing pursuits.

Thus, for instance, in the recent *Estetica*, by Benedetto Croce, we learn that æsthetics is purely and simply the science of expression; expression being itself so defined as to be identical with every form of apperception, intuition, or imaginative synthesis. This imagined æsthetics includes the theory of speech and of all attentive perception, while it has nothing in particular to do with art or with beauty or with any kind of preference. Such system-making may be a most learned game, but it contributes nothing to knowledge. The inventor of Volapük might exhibit considerable acquaintance with current languages, and much acumen in comparing and criticizing their grammar, but his own grammar would not on that account describe any living speech. So the author of some new and ideal articulation of the sciences merely tells us how knowledge might have fallen together, if it had prophetically conformed to a scheme now suggesting itself to his verbal fancy; much as if a man fond by nature of archi-

tectural magnificence, but living by chance in a house built of mud and rubble, should plaster it on the outside, and, by the aid of a little paint, should divide it into huge blocks conjoined with masterly precision and apparently fit to outlast the ages. When this brilliant effect was achieved, and the speculative eye had gloated sufficiently on its masterpiece, the truly important question would still remain; namely, what the structure of that house really was and how long it could be expected to retain traces of the unmeaning checkerwork with which its owner's caprice had overlaid it.

Perhaps we may pursue our subject to better advantage if we revert to our mathematical friend, and try to turn his satirical dictum into something like a sober truth. Some questions, let us say, are important and soluble, because the subject-matter can control the answer we give to them; others are insoluble and merely vexatious, because the terms they are stated in already traduce and dislocate the constitution of things. Now the word 'æsthetics' is nothing but a loose term lately applied in academic circles to everything that has to do with works of art or with the sense of beauty. The man who studies Venetian painting is æsthetically employed; so is he who experiments in a laboratory about the most pleasing division of a strip of white paper. The latter person is undoubtedly a psychologist; the former is nothing but a miserable amateur, or at best a historian of art. Æsthetic too would be any speculation about the dialectical relation of the beautiful to the rational or to the absolutely good; so that a theologian, excogitating the emanation of the Holy Ghost from the Son and from the Father, might be an æsthetician into the bargain, if only the Holy Ghost turned out to mean the fulness of life realized in beauty, when deep emotion suffuses luminous and complex ideas.

The truth is that the group of activities we can call æsthetic is a motley one, created by certain historic and literary accidents. Wherever consciousness becomes at all imaginative and finds a flattering unction in its *phantasmagoria*, or whenever a work, for whatever purpose constructed, happens to have notable intrinsic values for perception, we utter the word 'æsthetic'; but these occa-

sions are miscellaneous, and there is no single agency in nature, no specific organ in sense, and no separable task in spirit, to which the æsthetic quality can be attributed. Æsthetic experience is so broad and so incidental, it is spread so thin over all life, that like life itself it opens out for reflection into divergent vistas. The most important natural division in the field of reflection is that between the vista of things found and the vista of things only conceived or desired. These are two opposite and centrifugal directions in which reasoned knowledge may expand; both diverge from the common root furnished by practical knowledge, memory, and history; one, proceeding by observation, yields natural science, and the other yields ideal science, which proceeds by dialectic. Yet even these two regions, the most disparate possible in speculation, covered respectively by pre-Socratic and by Socratic philosophy, are themselves far from separable, since before external facts can be studied they have to be arrested by attention and translated into terms having a fixed intent, so that relations and propositions may be asserted about them; while these terms in discourse, these goals of intent or attention, must in turn be borne along in the flux of existence, and must interpret its incidental formations.

Now, much that is æsthetic is factual, for instance the phenomena of art and taste; and all this is an object for natural history and natural philosophy; but much also is ideal, like the effort and intent of poetic composition, or the interpretation of music, all of which is concerned only with fulfilling intent and establishing values. That psychology may occasionally deal with æsthetic questions is undeniable. No matter how clearly objects may originally stand out in their own proper and natural medium, in retrospect they may be made to retreat into the experience which discovered them. Now, to reduce everything to the experience which discloses it is doubtless the mission of psychology,—a feat on which current idealism is founded; so that the subject-matter of æsthetics, however various in itself, may be swallowed up in the psychological vortex, together with everything else that exists. But mathematics or history or judgments of taste can fall within the psychological field only adventitiously

and for a third person. An eventual subsumption of the whole universe under psychological categories would still leave every human pursuit standing and every field of experience or faith distinct in its native and persisting hypostasis. Intelligence is centrifugal. Every part of rational life, in spite of all afterthoughts and criticisms, remains in the presence of its own ideal, conscious of the objects it itself envisages, rather than of the process imputed to it by another. Æsthetic experience will therefore continue to elude and overflow psychology in a hundred ways, although in its own way psychology might eventually survey and represent all æsthetic experience.

If psychology must sometimes consider æsthetic facts, so must moral philosophy sometimes consider æsthetic values. As mathematical dialectic, starting with simple intuitions, develops their import, so moral dialectic, starting with an animal will, develops its ideals. Now a part of man's ideal, an ingredient in his ultimate happiness, is to find satisfaction for his eyes, for his imagination, for his hand or voice aching to embody latent tendencies in explicit forms. Perfect success in this vital, æsthetic undertaking is possible, however, only when artistic impulse is quite healthy and representative, that is, when it is favorable to all other interests and is in turn supported by them all. If this harmony fails, the æsthetic activity collapses inwardly by inanition,— since every other impulse is fighting against it,— while for the same reason its external products are rendered trivial, meretricious, and mean. They will still remain symptomatic, as excrements are, but they will cease to be works of rational art, because they will have no further vital function, no human use. It will become impossible for a mind with the least scope to relish them, or to find them even initially beautiful. Æsthetic good is accordingly no separable value; it is not realizable by itself in a set of objects not otherwise interesting. Anything which is to entertain the imagination must first have exercised the senses; it must first have stimulated some animal reaction, engaged attention, and intertwined itself in the vital process; and later this æsthetic good, with animal and sensuous values imbedded in it and making its very substance, must be swallowed

up in a rational life; for reason will immediately feel itself called upon to synthesize those imaginative activities with whatever else is valuable. As the underlying sensuous good must be necessarily merged in the imaginative (their product being what we call æsthetic charm), so in a cultivated mind ulterior rational interests, never being out of sight, will merge in the same total and immediate appreciation. It will be as impossible wholly to welcome what is cruel or silly, what is groundless, mindless, and purely æsthetical, as wholly to welcome what gives physical pain. Reason suffers us to approve with no part of our nature what is offensive to any other part; and even mathematical cogency, for instance, becomes trivial, in so far as mathematical being is irrelevant to human good. The whole of wisdom must color a judgment which is to be truly imaginative and is to express adequately an enlightened and quick sensibility.

The question whether æsthetics is a part of psychology or a philosophic discipline apart is therefore an insoluble question, because æsthetics is neither. The terms of the problem do violence to the structure of things. The lines of cleavage in human history and art do not isolate any such block of experience as æsthetics is supposed to describe. The realm of the beautiful is no scientific enclosure; like religion it is a field of sublimated experience which various sciences may partly traverse and which is wholly covered by none. Nor can we say that, because to analyze the sense of beauty is a psychological task, this analysis constitutes a special science. For then astronomy too would have a psychology of its own, and even its special æsthetics, and a fresh science would spring into being whenever a new object offered itself to any observer.

What exists in the ideal region in lieu of an æsthetic science is the art and function of criticism. This is a reasoned appreciation of human works by a mind not wholly ignorant of their subject or occasion, their school, and their process of manufacture. Good criticism leans on a great variety of considerations, more numerous in proportion to the critic's competence and maturity. Nothing relevant to the object's efficacy should be ignored, and an intelligent critic must look impartially to beauty,

propriety, difficulty, originality, truth, and moral significance in the work he judges. In other words, as each thing, by its existence and influence, radiates effects over human life, it acquires various functions and values, sometimes cumulative, sometimes alternative. These values it is the moral philosopher's business to perceive and to combine as best he can in a harmonious ideal, to be the goal of human effort and a standard for the relative estimation of things. Under the authority of such a standard arts and their products fall of necessity, together with everything else that heaven or earth may contain. Towards the rational framing of this standard must go, together with every other interest and delight, the interest and delight which men find in the beautiful, either to watch it or to conceive and to produce it. Æsthetic sensibility and artistic impulse are two gifts distinguishable from each other and from other human gifts; the pleasures that accompany them may of course be separated artificially from the massive pleasures and fluid energies of life. But to pride oneself on holding a single interest free from all others, and on being lost in that specific sensation to the exclusion of all its affinities and effects, would be to pride oneself on being a voluntary fool. Isolated, local sensibility, helplessness before each successive stimulus, is precisely what foolishness consists in. To attempt, then, to abstract a so-called æsthetic interest from all other interests, and a so-called work of art from whatever work ministers, in one way or another, to all human good, is to make the æsthetic sphere contemptible. There has never been any art worthy of notice without a practical basis and occasion, or without some intellectual or religious function. To divorce in a schematic fashion one phase of rational activity from the rest is to render each part and the whole again irrational; such a course would lead in the arts, if it led to anything, to works with no subject or meaning or moral glow. It would lead in other fields to a mathematics without application in nature, to a morality without roots in life, and to other fantastic abstractions wholly irrelevant to one another and useless for judging the world.

Nor would such an insulation of the æsthetic ideal secure any permanent division of functions, nor even attain an ultimate tech-

nical analysis. For after the alleged æsthetic sphere had been abstracted, at the cost of making it a region of pure idiocy, it would turn out that an æsthetic element had remained imbedded in men's other thoughts and actions. Their steam-engines, their games, their prose, and their religion would prove incorrigibly, inherently, beautiful or ugly. So that side by side with pure æstheticism, — something so dubious and inhuman, — we should have to admit the undeniable beauties of the non-æsthetic, of everything that was fit, lucid, beneficent, or profound. For what is practically helpful soon acquires a gracious presence; the eye learns to trace its form, to piece out its characteristics with a latent consciousness of their function, and, if possible, to remodel the object itself so as to fit it better to the abstract requirements of vision, that so excellent a thing may become altogether congenial. Æsthetic satisfaction thus comes to perfect all other values; they would remain imperfect if beauty did not supervene upon them, but beauty would be absolutely impossible if they did not underlie it. For perception, while in itself a process, is not perception if it means nothing or has no ulterior function; and so the pleasures of perception are not beauties, if they are attached to nothing substantial and rational, to nothing with a right of citizenship in the natural or in the moral world. But happily the merit of immediate pleasantness tends to diffuse itself over what otherwise is good, and to become, for refined minds, a symbol of total excellence. And simultaneously, knowledge of what things are, of what skill means, of what man has endured and desired, reënters like a flood that no man's land of mere æstheticism; and what we were asked to call beautiful out of pure affectation and pedantry, now becomes beautiful indeed.

In moral philosophy, then, there is as little room for a special discipline called 'æsthetics' as there is among the natural sciences. Just as we may consider, among other natural facts, the pleasures incident to imagination and art, as we may describe their occasions and detail their varieties, so in moral philosophy we may train ourselves to articulate the judgments vaguely called æsthetic, to enlarge and clarify them, to estimate their weight, catch their varying message, and find their congruity or

incongruity with other interests. This will be an exercise of moral judgment, of idealizing reason; and its very function of attributing worth reflectively and with comprehensive justice, will forbid its arrest at the face value of dumb sensation, or of abstract skill, or of automatic self-expression; whatever distinguishable interests may be covered by these terms will be only ingredients in the total appreciation our criticism is to reach. The critic's function is precisely to feel and to confront all values, bringing them into relation, and if possible into harmony.

Accordingly, the question whether æsthetics is a part of psychology or a separate discipline is, I repeat, an insoluble question, because it creates a dilemma which does not exist in the facts. A part of psychology deals with æsthetic matters, but cannot exhaust them; parts of other sciences also deal with the same. A single and complete æsthetic science, natural or ideal, is an idol of the cave and a scholastic chimera. As art has hardly prospered where men were barbarous or unintelligent, or where wealth and freedom did not exist, so the theory of æsthetic sensibility cannot advance except by an advance in history and psychology; while to produce a just and fruitful appreciation of beauty it is first requisite to ennoble life, to purify the mind with a high education, with much discipline of thought and desire. Creative genius would otherwise find no materials fit to interpret; nor could art otherwise divine what direction its idealizations should take, so as to make them, what true beauties are, so many premonitions of benefit or so many echoes of happiness.

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DISCUSSION.

EVOLUTIONARY METHOD IN ETHICAL RESEARCH.

I WISH to recall the reader's attention to the two essays on Evolutionary Method and Morality,[1] published by Professor John Dewey in this REVIEW, in March and July, 1902. The object of the first paper is to show that scientific ethics is possible only by that method. Two distinct propositions are thus involved: first, that the method in question is applicable to the treatment of ethical problems; and, secondly, that apart from this method no scientific ethics is possible. To the establishment of the first proposition, the whole paper is really devoted. For the second, no evidence is anywhere offered,— except, indeed, a direct appeal to the scientific experience of the reader. Yet it is this second proposition that gives the essay its sub-title.

Professor Dewey prefaces the discussion with a consideration of the claims of the experimental method to rank as essentially genetic. The essence of the experimental method is said to be "control of the analysis or interpretation of any phenomenon by bringing to light the exact conditions, and the only conditions, which are involved in its coming into being." This fact, it is said, is hardly warrant for holding it to be in a true sense historical or evolutionary; in the first place, because the historical series is unique both in itself and in its context, while the terms with which experiment deals occur and recur without essential change in the dislocation; and, in the second place, because the main interest in experimental science is not in the individual case but in the more general results that at once emerge.[2] But if not strictly historical, the experimental method is yet truly genetic; and, indeed, the distinction is due to a mere abstraction for our own ends. The serial order, with which experiment deals, is perfectly individual; but, since our ends are general, we can have substitution without loss.

Is it true that the experimental method aims at bringing to light the sole and sufficient conditions of the genesis of a phenomenon? *Prima facie* the very opposite is true. The course of an experiment is the natural sequence of cause and effect. It is the causes that are con-

[1] "The Evolutionary Method as Applied to Morality. I, Its Scientific Necessity; II, Its Significance for Conduct."

[2] For that matter, history itself, when it is scientific, and in so far as it is scientific, finds its main interests in the universal aspects of its data.

sciously predetermined, not the effects. The immediate problem, at least, is not, "What was the cause?" but, "What will be the result?" A vast amount of experimentation that is performed on each newly discovered chemical element,—as the present investigations into the properties of radium,—is of this relatively aimless character. In so far, however, as an experiment has a distinct practical purpose, Professor Dewey's formulation holds true,—as it holds true of all practical research by any method whatsoever. What we care to know is the means to our end. Thus the definitely practical experiment takes the form: "Will these means (suggested by analogy, observed coincidence, or other imperfect induction) lead to the desired end?" But the actual experiment is always directly a synthesis, and only indirectly ever an analysis.

What, then, of Prof. Dewey's illustration, the problem of the nature of water? "Water simply as a given fact resists indefinitely and obstinately any direct mode of approach. No amount of observation of it, as given, yields analytic comprehension. Observation but complicates the problem by revealing unsuspected qualities that require additional explanation" (p. 109). On a first reading, these sentences seem incomprehensible. For the writer has just said that "by nature, in science, we mean a knowledge for purposes of intellectual and practical control." Surely a great mass of knowledge of water, enabling us to turn it to a vast number of practical ends, has been obtained by direct observation and scrutiny. Why, then, with the definition just given of the nature of a substance, should such practical knowledge be accounted a mere complication of the problem of its nature? And what is "analytic comprehension"?

The next few sentences furnish a seeming explanation of Professor Dewey's meaning. "What experimentation does is to let us see into water in the process of making. Through generating water we single out the precise and sole conditions which have to be fulfilled that water may present itself as an experienced fact." Are we, then, to understand by the nature of water its chemical constitution? Is that rather to be accounted its nature than the observed facts, that it evaporates and freezes and quenches thirst? Or is "analytic comprehension" to mean knowledge of chemical analysis? Are the physical properties of water actually explained by its chemical analysis? Surely something has been said here that was not clearly intended. But, further, does the chemical composition of a substance constitute the condition of its genesis? Decidedly not. Despite all that the experiment of generating water proves, not a particle of water in the

universe,— other than that which is formed in the experiment itself,— may have come into being by the uniting of oxygen and hydrogen. The experiment shows us the analysis of water and a simple mode of compounding it; not the actual mode of production,— whether we call it 'genetic' or 'historical,' — of all existing water. On the whole, we must, I think, conclude that the experimental method, while perfectly applicable to problems of genesis, is not distinctly a genetic method.

Proceeding to the subject of ethical research, Professor Dewey announces his thesis: "I shall endeavor to point out that there is more than an analogy, there is an exact identity, between what the experimental method does for our physical knowledge, and what the historical method in a narrower sense may do for the spiritual region: the region of conscious values" (p. 113). In this connection he gives what appears to me to be a true and luminous account of the application of the evolutionary method to ethics. But there occur occasional statements, leading to the above thesis, which seem somewhat exaggerated. "The early periods present us in their relative crudeness and simplicity with a substitute for the artificial operation of an experiment." Surely this is true only with most important reservations. In physical research we exclude complications as unessential; we are justified in abstraction. But in the organism, and especially in society, the complexity is all-important. Just what we cannot tolerate in ethics is over-simplification; and this has hitherto been a chief crime of evolutionary moralists. "Following the phenomenon into the complicated and refined form which it assumes later, is a substitute for the synthesis of the experiment." But the synthesis of the experiment is either only a mere check upon the analysis, or it is a novel combination, motived only by analogies or incomplete inductions. But in evolutionary research "following the phenomenon" is the main thing,— the observation of influences from countless sources, not a mere shifting of the elements discovered in the relatively simple analysis. From the point of view of method, if not of formal logic, it is one thing to note the results of an intended and controlled combination of elements, and a radically different thing to trace the course of concrete history,— the conflicting results of infinitely complex and uncontrolled forces, only gradually coming into view in the advance of the investigation.

However, when all reservations are made, we must finally admit both that the historical method is perfectly applicable to ethical inquiry and that the simplicity of early social forms permits of rela-

tively facile analysis. With Professor Dewey's discussion of the popular fallacy, that genetic explanation means the resolving of the later into the earlier, we shall also have no quarrel. In this connection, however, I note one possible misstatement. It is said: "The later fact in its experienced *quality* is unique, irresolvable, and underived." It is to the word 'underived' that I would take exception, provided it implies that there is not continuity of quality as well as of quantity or degree. For, as a matter of fact, every quantity is really as unique as every quality. This is untrue only of abstract extension; an inch has no geometrical properties different from those of a millimeter. But every concrete extension, as well as every number or intensity, is thoroughly unique,— has, in short, a distinct quality. If, then, quality be not continuous in change, neither is quantity. Again, in criticism of President Schurman's volume, *The Ethical Import of Darwinism*, Professor Dewey makes another apparent misstatement, which, however, is surely unintentional. He points out that continuity of process must not be confused with identity of content, and that knowledge of differences is not less important than that of the generic identity of the process. He then says: "Supposing (which does not seem to be the case) that an identical belief regarding the duty of parental care, or of conjugal fidelity, could be discovered in human societies at all times and places. This would throw no light whatsoever upon the scientific significance of the phenomenon." Of course, this is literally untrue. The supposed fact would indicate that the development of the belief was simultaneous with, or prior to, the differentiation of the human species, and must, therefore, have a relatively universal and permanent ground in human character.

It remains to consider the few passages bearing upon the second of the two main propositions advanced in the essay, that no other method than the historical method is available for scientific ethical research. "We cannot apply artificial isolation and artificial combination [to an ethical phenomenon]. . . . Only through history can we unravel it. . . . History offers to us the only available substitute for the isolation and for the cumulative recombination of experiment" (p. 113). But what of the relative isolations and recombinations that repeatedly occur in our common life, and are ever open to watchful and intelligent observation? Not all of modern life is equally complex and defiant of analysis. "That which is presented to us in the later terms of the series in too complicated and confused a form to be unraveled, shows itself in a relatively simple and transparent mode in the earlier members" (p. 114). But the later terms have the not

slight advantage of being recent or even present terms, open to our observation in all their complexity,— complete as they are, and not schematized as they may have been. "The significance of conscious or spiritual values cannot be made out by direct inspection, nor yet by physical dissection and recomposition. They are, therefore, outside the scope of science except so far as amenable to historic method" (p. 123). Note the disjunction: "direct inspection" and "physical dissection and recomposition" are the only methods of non-historical science. Surely this needs proof; or, if by definition "direct inspection" is made to cover its side of the dichotomy, we certainly need evidence of its helplessness in the field of ethics. From one point of view, the proposition is almost self-contradictory. For if direct inspection be intrinsically incompetent, then the historical method cannot even be attempted. A beginning by direct inspection must be made somewhere in the historical series; if not in the complex present, then in the relatively simple (but dimly seen) past. The direct method is then not intrinsically incompetent, but may only be inadequate to the relative complexity of contemporary morals. But if even this be true, it is none the less a surprising proposition, in view of the great mass of ethical theory which it wholly discredits, and extraordinarily good evidence must be forthcoming, if the world is to be convinced of it.

And yet, in one sense, the proposition is palpably true,— in the very modest and temperate sense, that ethical research cannot afford to neglect any promising instrument of analysis; that no one method has elicited, or will probably succeed in eliciting, the whole truth; and that each new point of view means a new perspective which brings into clear vision something that was before obscured or concealed. So we should say of the introspective and evolutionary methods of psychology, that introspection, whether favored or not by experimental conditions, has revealed much, indeed, and will doubtless reveal much more; but that genetic psychology, too, has its distinctive powers and honors; that, in particular, certain problems lend themselves more readily to introspective, and certain others to evolutionary treatment.

After all, evolutionary ethics is not so much a science as the hope of a science. We must be on our guard against too extreme statements either of its accomplishments or of its potentialities. "Just as experiment transforms a brute physical fact into a relatively luminous series of changes, so evolutionary method applied to a moral fact does not leave us either with a mere animal instinct on the one side, or with a spiritual categorical imperative on the other. It reveals to us a single

continuing process in which both animal instinct and the sense of duty have their place" (p. 119). True, we know that such a process has throughout vast ages been going on; and we catch glimpses of it at various points in its development. But the record is fearfully imperfect, except of the very latest stages. In particular, of the transition from brute to savage, we have very little precise knowledge. Perhaps this is all that Professor Dewey means by the revelation of a "single continuous process"; but, if so, we must yet remember that, for purposes of scientific analysis, the fact that *A* has developed from *B* does not suffice for much; we must have definite knowledge of closely consecutive stages of the development. Such knowledge of a vast period of the history of moral origins we do not possess, and seemingly can never possess,—eke out our ignorance, as we may, by comparative and child psychology.

In his second paper, Professor Dewey discusses the relation of the method of evolution to the theories of intuitionalism and empiricism. There would seem, at the outset, to be no necessary incompatibility of the method with either theory. In the first place, as to intuitions, the question whether we possess any mental states that deserve such a name is one to be settled by immediate reference to present facts; the theory of evolution has nothing directly to do with the matter.[1] And, in the second place, the philosophical doctrine of empiricism, whether false or true, operates on a level of thought where it could hardly come into conflict with a biological or sociological generalization. An associational interpretation of the evolution of mental phenomena is no more impossible than an atomistic interpretation of the evolution of a world-system.

But Professor Dewey attacks the situation on a different side. It is the epistemological value of supposed intuitions that he questions. "The mere existence of a belief, even admitting that as a belief it cannot in any way be got rid of, determines absolutely nothing regarding the objectivity of its own content. The worth of the intuitions depends upon genetic considerations" (p. 357). But upon what, we may ask, has rested the validity of ordinary sense-perception? Of course, the survival value is evident; but did man have to wait for the theory of psychophysical evolution to give him a warrant for an abiding faith in the evidence of his senses? It is their present functional value apart from all questions of origin, that is the direct and sufficient evidence of their trustworthiness. What is definitely known to-day as

[1] Except, perhaps, negatively; as when the intuition is defined as *not* having arisen by induction from experience.

to the origin and development of the reasoning process? Yet the validity of the process does not wait upon genetic psychology for its justification. And such must be the case with moral intuitions, if any such exist. Their experienced inner conformity, one with another, throughout the moral life would suffice. In short, there is no disjunction between mere existence and genetic considerations as exhausting the evidences of validity.

The explanation of Professor Dewey's attitude in the matter is not far to seek. For him, present functional value is distinctly and decidedly a genetic consideration; and so the disjunction which we have denied he finds no difficulty in maintaining. No doubt there is a certain force in his contention. The genetic account of function, and the functional account of evolution, have become indispensable to complete knowledge of either function or history. Moreover, a function is itself a process, a change, a development; so that Professor Dewey feels himself amply justified in merging the two conceptions, — in consolidating functional theory with genetic theory as, properly speaking, a single theory. In this spirit, he concludes the paragraph from which I have last quoted (p. 358). Nevertheless the position does not appear to me to be perfectly correct. Evolutionists are apt to arrogate to themselves the view of present life as a process; whereas scarcely anyone has ever looked at it in any other way. If, when Heraclitus said that all things flow, he announced himself an evolutionist, then Professor Dewey's contention is altogether proper. But the essential point, I take it, especially in current controversy, is that the mode of flowing has itself flowed, — that the process itself not only is history but has a history. The grinding of corn, for example, is a process, a change, an evolution, if you please; the grain enters into the mill, and the flour comes out. But the process of changing grain into flour has itself evolved during a period of thousands of years. It is this second evolution, — not the evolution *in* the process, of which no sane man has ever been ignorant, but the evolution *of* the process, — that is the relatively new conception, the application of which to the problems of morality constitutes evolutionary ethics.

Moreover, where questions of validity are concerned, the study of present results has at least two decided methodological advantages over the study of origins. First, we must take account of that "heterogony of ends" with which Wundt has made us familiar. A knowledge of the sources of things may be extremely deceptive, if it fails, — as in so many fields it must fail, — of completeness. The second advantage we have already noticed, — the simple fact, that in the process as it now

operates we have a well-nigh infinitely richer field for observation than in all the records of the past. When account is taken of these several considerations, we may not readily agree with Professor Dewey that aside from the method of evolution the validity of a supposed intuition could in no wise be established.

One other of Professor Dewey's criticisms upon intuitionalism we may note, though it has little direct bearing upon this discussion. If an intuition fails once, he says, it fails always. "Either everything that appears to the individual as final and authoritative is such, or else such appearance lacks competency in any case" (p. 360). That this is not strictly true, the analogy of sense-perception may again convince us. We may have been occasionally subject to hallucinations of sight and hearing; yet the ordered consistency of our present waking existence leaves us no doubt as to the truth of our present perceptions. And so, though a moral intuition, in which we had had entire confidence, should prove utterly mistaken, that need not rob our life of all further moral guidance. Of course, this is not to say that an intuitionalism is not conceivable, against which Professor Dewey's criticism holds. But surely intuitionalism as a great historical school of thought has more to say for itself than he allows.

"Empiricism," says Professor Dewey, "is no more historic in character than intuitionalism. . . . The genetic method determines the worth or significance of the belief by considering the place that it occupied in a developing series; the empirical method by referring it to its components" (p. 364). Here, again, I fail to discover a true disjunction. Empiricism may or may not be genetic in method and spirit. The associations of psychical elements are temporary; they have a history and a function. For the empiricist, as for another man, the idea is a response to a situation and issues in a reconstruction of the situation. So far from dissolving the bonds of the temporal connection of ideas, he distinguishes himself by the elaboration of a distinct as well as comprehensive theory as to the intimate nature and mechanism of that bond. Not content with the general doctrine, "that the idea arises as a response, and that the test of its validity is to be found in its later career as manifested with reference to the needs of the situation that evoked it" (p. 363), — not so easily content, I say, the empiricist has his explicit theory, be it true or false, as to the precise manner in which ideas arise in response to situations, and of the precise mode of their reference to temporary exigencies.

Again, it appears unwarrantable to assert an antithesis between the empirical and genetic methods on the ground that for the one method

the genesis of the idea is a process of repetition or cumulation (allowing these terms to stand for the whole associative mechanism), and that for the other method the genesis is a process of adjustment (p. 365). The association of ideas, as empiricism explains it, is most assuredly an adjustment of the psychophysical organism to its environment, an adjustment whose survival value is not hard to surmise.

Nor does empiricism lack for a complete account of historical change. It is not true, that "by its logic change of quality in passage from generating elements to final product must be explained away" (p. 366). The unlimited combination even of a finite number of distinguishable elements is a sufficient ground of qualitative change. It is the fundamental assumption of empiricism that each new arrangement has qualitative novelty as an arrangement, even though the elements be old. Moreover, the empiricist need not deny the possibility of the development of new elements, by gradual differentiation from the old. He may believe, for example, that auditory sensation is of more recent origin than visual sensation. But even without such differentiation, continuous change is sufficiently provided for in the premise, that the intensity of each element may vary from the liminal to the maximal value.

A further criticism of the adequacy of the empirical method to genetic problems may appear to be more truly deserved, — that empiricism fails to recognize the function of the negative elements in experience as stimuli to the building up of a new and more comprehensive experience (pp. 367 f.). A persistent biological habit is conceived as issuing in a conscious custom, and the latter (by merely cumulative effect) in a moral practice. But by no such mere repetition can consciousness or moral valuation have arisen; the original act would simply have been hardened as it was. It is only through *failure* of the instinct or habit to effect an adequate adjustment, that a different mode of adaptation could become necessary.

Let us admit the general historical truth of this criticism. Empiricism is a far older method than that with which the theory of evolution has provided us; and even the latter-day masters of the empirical school may well have shown a fondness for the tools of thought traditional among them, and a misappreciation of instruments more recently devised. But the defect, if indeed it exist, does not seem to be fundamental. In Professor Dewey's criticism, one point appears to me ambiguous, — whether by 'failure' he means necessarily *felt* failure, or perhaps simply *actual* failure, of adjustment. But, in the latter case, it is surely open to the empiricist to assume with Professor

Dewey that the failure of an existing mode of response gives survival value to a supplementary variation. And as for the feelings arising from failure, these are surely a part of the empiricist's stock in trade, however he may in the past have undervalued them. The "negative elements in experience" are elements which empiricism has never failed to include in its survey. The effect of dissatisfaction upon the association of ideas is a problem by no means foreign to the spirit of empirical speculation.

THEODORE DE LAGUNA.

REPLY TO PROFESSOR BAKEWELL.

My object in replying to Professor Bakewell's review of my book *Why the Mind has a Body* in the last number of this journal is not to complain of misrepresentation or ill-treatment, for his article seems to me on the whole intelligent and fair; but to call attention to certain points where he has not completely understood me, and where a complete understanding would involve some modification of the judgments he passes. These points are my attitude toward the theory of a non-phenomenal subject, my view that transcendent knowledge is non-rational, and my account of the panpsychist solution of the problem of the relation of mind and body.

1. "The theory of a non-phenomenal subject," says Professor Bakewell, "is disposed of cavalierly in a couple of pages, mainly on the ground . . . that that theory involves 'extruding the ego from experience,' which is precisely what that theory affirms to be impossible." This would be telling criticism were it not for the fact that by a 'non-phenomenal subject' Professor Bakewell and I do not mean the same thing. He means a subject which is experienced but not known; I mean a subject which is not even experienced, because it is conceived as being 'that which' experiences. The word 'phenomena' is, in fact, currently used in these two senses, — by Professor Ward, for instance, for objects of thought as distinguished from feelings and will, and by Mr. Bradley (*cf.* the title of his article "A Defence of Phenomenalism in Psychology," in *Mind* for 1900) for whatever is experienced, a view which Professor Ward characterizes as 'presentationism.' Now, against the theory that the subject is not and cannot be a 'phenomenon' in the sense of an object of thought, I have not a word to say; that is rather my own view. But those who begin by making the subject non-phenomenal in this sense often end by making it non-empirical. Failing to distinguish sharply between experience and thought, they imagine that not merely thought but experience

requires a subject; they think that anything of which we can be aware, not merely in the sense of knowing, but in the sense of immediate feeling, requires a subject to be aware of it; thus they make the subject a thing of which we cannot be in any sense aware, — in a word, they "extrude it from experience." And, by doing so, they come in conflict with the principle, which I take to be absolutely fundamental, that experience is our one source of knowledge about the mind.

Perhaps Professor Bakewell thinks I err in supposing that there are philosophers who hold this view. If I do, I err in good company, for Mr. Bradley, in the article above referred to, says: "We have (according to this view) on one side the experienced, and that, if for the moment we disregard pleasure and pain, consists in the perceived, in objects given to and before the self. This forms the whole content of the experienced. The experienced in short is but one aspect of experience, and the other aspect consists in the activity of the self. This activity is itself not perceived and does not itself enter into the experienced content, and is not and cannot be itself made into an object. But beside these two sides of experience, one experienced and the other not experienced, we have also feeling in the sense of pleasure and pain. . . . *The aspect of self has by this view been turned out of the experienced*" (pp. 38, 39 — italics mine).

Professor Bakewell's view seems to be that the subject is experienced, but not completely experienced. I admit that this is true in a sense. But it seems to me that the distinction between the subject so far as experienced and the subject as lying beyond experience is the distinction between the actual and the potential self (I have given an account of the latter in my suggestion of a "substitute for the soul," pp. 201–203); and I do not see how the potential self can form any part of the momentary subject. In my view it becomes the subject only so far as it becomes experienced.

Professor Bakewell, as I say, seems to admit that the subject is partly at least experienced. But why then does he speak of the subject as "intuiting" or "witnessing" states of consciousness, — expressions which strongly suggest the non-empirical form of theory referred to above? One is tempted to doubt whether he has quite made up his mind between the view that the subject is experienced and the view that it is 'that which' experiences. Why, in particular, does he employ these expressions in describing my empirical view, — saying that, according to me, "the present ego is the state of consciousness at present immediately intuited" (as though by some other ego), while "another ego witnessed the past state" (instead of '*was* it')?

These sentences do not show him to be very familiar with, or at least very skilful in stating, James's theory of the subject as the "passing thought."

I allow myself to express this theory by saying that in memory the past state remembered "really *is* another consciousness." This, according to Professor Bakewell, is "discontinuity with a vengeance." How we should ever come to know the past, how the past selves should ever become ours, "remains a mystery" on such a view. Apparently, on the theory of a "permanent non-temporal ego" all is explained. The truth is that Professor Bakewell does not understand any better than I do how we come to know the past or how the past self becomes the present self; he merely *feigns* that they are identical, though he knows very well that they are only partly so; and this feigned identity seems to him to be an explanation, though it is in reality only a restatement of the facts.

2. Professor Bakewell admits that knowledge of the past and knowledge of other minds is transcendent; but he raises a great outcry over my doctrine that transcendent knowledge cannot be fully justified either by experience or by reasoning from experience, and is therefore non-rational or pre-rational. I express this view by saying that we transcend by "instinct," and this expression comes in for his special reprobation. Any irrational prejudice, such as hatred of a fellow-man, any superstitious belief, such as that in "witches and warlocks," might be justified on similar grounds.

And yet Professor Bakewell, as a student of the history of philosophy, must have read very much the same thing in Hume (see *Treatise*, Green & Grose's ed., Pt. III, Sect. XVI, p. 471; *Enquiry*, same ed., Sect. V, Pt. I, p. 41, Pt. II, p. 47; Sect. IX, p. 88; Sect. XII, Pt. II, p. 131). Did he feel, I wonder, in reading it, a similar apprehension lest his author should succumb to a belief in "witches and warlocks"?

Let me try to explain what I mean when I say that we transcend by "instinct." I pointed out in my book that the argument from analogy by which we are commonly supposed to reach our belief in other minds is not a logically valid argument, since from three empirical facts, — my body, my mind, another person's body, — you cannot infer a non-empirical existence, — the other person's mind, — without a logical leap. This does not mean that the argument from analogy is worthless and to be cast to the winds, but that it rests on a suppressed premise which is in its nature incapable of proof; namely, the existence of anything transcendent at all (pp. 217–219). Conceiving

the inference of things-in-themselves to be exactly analogous to, and merely a further extension of, that of other minds, I naturally make the same distinction here. My "proofs of things-in-themselves" are in the same position as the argument from analogy; indeed, one of them *is* the argument from analogy (see pp. 291, 292); they mark the places where things-in-themselves must be assumed, and indicate the character of the things-in-themselves to be assumed there, but they are powerless logically to carry us outside of our own consciousness. For this we need the force of instinct.

By 'instinct' I do not of course mean the social instinct, nor yet a special instinct *ad hoc*, but merely this: that, having an idea which, as a matter of fact, represents (*i. e.*, symbolizes and enables us to adjust our relations to) an extra-mental thing, we both act and think as if what we had to do with were the extra-mental thing and not the idea. In memory, for instance, we act as if our idea were the past experience itself, — that is, we act as if it were useless any longer to act; in expectation, we act as if the experience expected were on the point of appearing; in the assumption of other minds, we act, — not merely muscularly, but in the sequence of our thoughts, — as if those minds existed now, but externally to our own. This peculiar habit of action, which can hardly have been acquired in the lifetime of the individual, and which is certainly no product of reasoning, seems to me to correspond pretty closely to the definition of instinct.

But Professor Bakewell will have it that our belief in other minds is capable of justification on rational grounds. I cannot but regret that it did not occur to him to indicate these; that would have been such a simple way of disposing of the view that transcendent knowledge is instinctive. If he should reply to these remarks, I count on him to produce the reasons which in his opinion justify us in transcending.

One other point in this connection I desire to refer to before passing on. Professor Bakewell says that, by projecting physical facts beyond the subject, I "myself create the gaps which I invent my things-in-themselves to fill." As well might one say that, by conceiving people's bodies as expressive of something real, we ourselves create the gaps in which we place their minds. Why not be satisfied with their mere bodies? But now, I have shown that when people's minds act on each other, not directly, but across intervening matter, *there is a temporal gap*, in so far as the groups of physical events that are accompanied by consciousness are separated from each other by physical events that are not so accompanied (see pp. 255, 256). Here, then, is the gap which makes things-in-themselves necessary, and it is not of my inventing but of Professor Bakewell's ignoring.

3. Coming to the third matter, — the panpsychist solution of the problem of the relation of mind and body, — I must give Professor Bakewell credit for an honest and partially successful effort to understand that solution. And I am coming more and more to see that it is not an easy solution to understand. The limits of space set me by the editor are so narrow that I am not sure I can do justice to the subject here, but I will do the best I can, promising that I hope to give a new and detailed exposition of the theory in an early article.

Perhaps the simplest way will be to set forth the explanation first in terms of Berkeleian idealism, and then to correct that idealism. Professor Bakewell sees that A's consciousness might be conceived to call forth in B's a perception which should be that of A's brain-process. Now, if physical facts were identical with the perceptions of them, this would be, in principle, a complete explanation of the relation of mind and body. But Professor Bakewell points out that the object perceived is other than the perception of it, and that the mystery of the relation of mind and body is precisely how the mind can influence (or run parallel with, or be dependent on) the 'content' of the perception rather than the perception.

Here I would observe that, if the panpsychist had only succeeded in resolving the problem of the relation of mind and body into the problem of the relation of perception and object, he would at least have brought the former problem a step nearer to solution. But I shall be told that there is no plausibility in the resolution, unless it can be shown that the problem of the relation of mind and body is capable of solution along that line. Well, this can be shown.

The distinction between object and perception is not a numerical difference between a physical reality and a mental state, the latter 'intuiting' the former, but a logical distinction between two different ways of considering the same sensation-stuff in our thought, according as we take it in its relations with other similar sensation-stuff, and then we class it as a physical object, or take it as an episode in our personal history, and then we class it as a mental state. When we do the former, we are led by a variety of causes (of which I have given a sufficient account in Ch. xii) to attribute to it a continuity and permanence, and an independence of our minds, like those which belong to things-in-themselves; and our ability to do this is an exhibition of the peculiar instinct above referred to, by which we act and think as if what we had to do with were the transcendent object and not the mental state.

All this while, the object so conceived has no existence apart from the extra-mental reality, on the one hand, and the mental state, on the other; it is a purely ideal object. But an ideal object has no existence except when thought of. All the panpsychist is bound to account for, therefore, is the existence of the perception. Hence the passages where I argue that the only way to influence the content of a perception is to influence the perception (p. 306); that content, as a subjective fact, means simply "the character this and other like perceptions will have in case they exist" (p. 305); but that, in every actual case (which is the only sort of case we need consider), "the perceptions actually influenced are those only of persons physically near, and the possible perceptions of other persons are as a matter of fact impossible" (p. 306).

It seems to me that in these suggestions I have given all the data that are necessary for a complete thinking out of the panpsychist solution. If many nimble minds are so prepossessed against the theory by the names of its sponsors or contributors, — Berkeley, Hume, Fechner, Clifford, — that they will not take the trouble to think it out, I am willing to leave it to the future to decide whether the loss is theirs or mine. Meanwhile I await with eagerness some account of the explanation of the connection of mind and body that is implied in transcendentalism or in personal idealism.

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A REJOINDER.

The chief difficulty that I find in Professor Strong's argument, as he has elaborated it in *Why the Mind has a Body*, and again briefly indicated it in his courteous reply to my review of that work, is this: His conception of the ego as the "passing thought" does not bear the strain of metaphysics which he puts upon it. (Whether or not this notion is adequate for the needs of the science of psychology, where "the father of the brat" modestly confines it, is another question and does not concern us here.)

The ego is, according to Professor Strong, the present ego, and the present ego *is* the present state of consciousness. The "past state remembered really *is* [or was] another consciousness." The mind transcends the solipsistic limitations, in which experience and reason would confine it, solely by "the force of instinct." And, thereupon, the real world is taken on trust in this instinct, as being made up of many such minds, — now called things-in-themselves, — each one, however, as helpless to reach its neighbors either by reason

or by experience as were the "windowless monads" of Leibniz. Nothing but a *tour de force* can set up relations between them, — and then, indeed, it is hard to see how these relations can be conceived as real and as *between them*. Moreover, this atomistic pluralism is put in a still worse case by the affirmation of the purely transient character of the several minds. The consciousness, which the ego is, is, we are told, "real *as long as it lasts*." Thus our "things-in-themselves" are, it would appear, realities that flash into existence and out again, like regular ontological Jack o' lanterns. This seems to me to make our real world about as discontinuous as one could possibly imagine it, and to shroud in impenetrable mystery the facts of memory. To this Professor Strong replies, not quite pertinently, that I do not understand any better than he does how we can know the past. I "feign an identity." And this feigned identity, he adds, I seem to think an explanation, "though it is in reality only a restatement of the facts." If a restatement of the facts, it is not a feigned identity. However, I certainly did not maintain that a mere recognition of a deeper identity underlying the empirical pulses of consciousness was itself an explanation of memory. It is very far from being such an explanation. What I do maintain is, that this identity once admitted, even as partial identity, an explanation of memory becomes at least not inconceivable; whereas, if the self be wholly accounted for in the passing thought, memory involves a real relation between wholly sundered realities, and must therefore be once and for all time a mystery, since the terms in which the problem is then stated are, for our intelligence, self-contradictory.

But again, as opposed to this view of the ego, Professor Strong holds, as if seeming to feel its inadequacy (see his "Reply"), that continuity and permanence, as well as independence, belong to things-in-themselves (that is, to minds). If this be true, then his account of the ego needs revision, and that revision would, I believe, bring him much nearer to what is most fundamental in the doctrine of a non-phenomenal ego, for that is a recognition of precisely this permanent aspect of the ego, which, because permanent, can never be "given" in the phenomenal as such, whether the phenomenal be taken either as the immediate object of thought or as experience, in the restricted sense in which I understand Professor Strong to use this term.

Professor Strong objects to my speaking of the subject as "intuiting" or "witnessing" a state of consciousness, and in particular to my using these expressions in describing his view, since they imply, what he denies, the existence of a non-empirical ego. I acknowledge

the justice of the complaint and withdraw the terms. I used them to describe the character of immediate awareness that is supposed to be found in the *self*-experience, and I added in explanation Professor Strong's own phrase, that the self is "experienced but not known." I refer to this matter again here because the difficulty that one experiences in trying to state this view without seeming to depart from it is itself a significant fact; and others, who should be more skilful in manipulating it than I am, seem to be caught in the same snare. For instance, Professor Strong, in his "reply," speaks reprovingly of those who "imagine that not merely thought but experience requires a subject; they think that anything of which *we* can be aware, not merely in the sense of knowing, but in the sense of immediate feeling, requires a subject to be aware of it." Why bring in that *we*? And he continues: "Thus they make the subject a thing of which *we* cannot be in any sense aware," as if, on his own theory, *we* could. Yet, if I understand that theory, we should, in strictness of speech, say, "there is simple self-awareness." In a striking passage in his book, which illustrates the difficulty of making speech conform to the view that would identify the ego with "the fresh experience as it comes," Professor Strong writes: "The ego is the fresh experience as it comes, before *we* have had time to turn round upon *it* cognitively, and while *we — that is, it* — are engaged in cognizing other things" (p. 208; Italics mine in this paragraph). This difficulty, which seems inevitable, is one of the reasons for suspecting the adequacy of the account of the self in terms of the "passing thought."

Whether the "gaps," to fill which Professor Strong introduces his things-in-themselves, are found or invented, will depend on the extent and the nature of the "transcendence" implied in our knowledge of the past and of other minds, and this, in turn, will depend on our account of the ego. Professor Strong, of course, thinks that they are not invented, and he adds, as well might one suppose that, by "conceiving peoples' bodies as expressive of something real," we should create the gaps in which we place their minds. But in this case we most certainly should be inventing the "gaps," if by calling the bodies expressive of something real we meant that they were cut off from consciousness, from experience, and from knowledge, and independently existing. The notion of transcendence calls for careful scrutiny. There is undoubtedly a transcendence involved in memory and in perception; but here it is the transcendence of the momentary phenomenal self, of the "passing thought," and not of the real self. There is a kind of transcendence, even of the real self, in passing to

other minds. But, even in this case, the transcendence is not complete and absolute, in the sense that the individual mind is wholly cut off from real communion with, real relations to, other minds,— relations that are discovered by reason and experience. The truth of this is evidenced by the fact that the isolated ego is a sheer abstraction. We do not first find in experience such an ego, and then have to search for other minds. The very private self always gets part, at least, of its meaning in terms of other minds. Here is a fact that furnishes a problem requiring solution, and, with a true conception of the ego, it is soluble.

But Professor Strong cuts the knot by "the force of instinct." Is it not true, however, that any reference to instinct is simply naming a problem for future solution? And until that solution is found, one can never be sure that the capacity called instinctive is a power "derived from the hand of nature," and not simply a habit due to ignorance or prejudice. Professor Strong writes: "This peculiar habit of action [whereby we do transcend the self], which can hardly have been acquired in the lifetime of the individual, and which is certainly no product of reasoning, seems to me to correspond pretty closely to the definition of instinct." But we must observe that this transcending he further holds to be necessary in order to make experience intelligible. Now, a habit of the mind that is not the result of experience, nor a product of reasoning, and yet is necessary to make experience intelligible, is not so far from being a definition of the *a priori*, or of reason itself. If, now, we take Professor Strong at his word when he endows his things-in-themselves with permanence and continuity, and further endow them with instinct in this sense, we are still nearer to the conception of the non-phenomenal ego.

As for the general panpsychist contention, I am more nearly in agreement with Professor Strong than perhaps he suspects. Even the term 'panpsychism' I could adopt, if its sponsors had not so restricted the meaning of the *psyche*. I believe, with him, that the problem of the relation of mind to body is brought nearer solution by being resolved into the problem of the relation of perception to object,— though I think these terms not of the happiest,— and that it is capable of solution along these lines. And I follow him further in making the distinction between object and perception logical rather than ontological. But when we reach this point, it is seen that the object is at once dependent on two or more distinct egos; and the puzzle of the relation of mind and body returns in this form: How can I influence perception in another consciousness? To say that I

do so "by influencing the perception," as Professor Strong does, and that "the perceptions actually influenced are those only of persons physically near," is merely a restatement of the fact calling for solution. So, when we reach the end of his book, we are, it seems to me, just ready to begin to discuss the real problem, and we should be in a better position to do so if the way had not been barred by the author's conception of the ego.

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REVIEWS OF BOOKS.

Pure Sociology: A Treatise on the Origin and Spontaneous Development of Society. By LESTER F. WARD. New York, The Macmillan Co., 1903.—pp. xii, 607.

To attempt an account of this work or an estimate of its value as a contribution to sociology would not be in place in this REVIEW, even if the present writer were competent for such a task. An appreciation of the results attained for sociology by the labors which have extended through so many years, and have had so many obstacles to surmount, must come from fellow workers in the cause of determining the principles and methods of the still inchoate science. The interest of the student of philosophy and psychology lies, first, in seeing what the author's conception of sociology is, and therefore what relation sociology is conceived to occupy to social psychology, ethics, the philosophy of history, and various other social sciences; and secondly, in case the author covers fields which are worked also by the philosopher or psychologist, in comparing his treatment with that of other workers.

Dr. Ward's view of sociology inevitably invites such comparison. For the subject matter is declared to be 'human achievement.' Another definition is that pure (as distinguished from applied) sociology is "a treatment of the phenomena and laws of society as it is, an explanation of the processes by which social phenomena take place, a search for the antecedent conditions by which the observed facts have been brought into existence, and an ætiological diagnosis that shall reach back as far as the state of human knowledge will permit into the psychologic, biologic, and cosmic causes of the existing social state of man." It is evident, also, that Dr. Ward is at least as much interested in his ætiological diagnosis as in the phenomena and laws of society. In round numbers, about one fourth of the volume is devoted to the general logical and methodological discussion, one fourth to cosmic and biologic material, one fourth to analytic and genetic psychology, and one fourth to human society. Moreover, the author's view of what may properly be regarded as a cause of the existing social state is very catholic. Something over thirty pages are devoted to a discussion of the relation of the sexes in plants and animals as preface to the author's 'gynæcocentric theory.' In tracing the 'biologic' origin of the subjective faculties, a beginning is made with the nebular hypothesis. The author's interest in botany prompts frequent

excursions into that field for analogies. Many topics of various sorts are adverted to in passing, as if on the theory that sociology as a *scientia scientiarum* 'embraces all truth' (p. 91).

The work is thus constructed on lines similar to those of Schopenhauer's *The World as Will and Idea*, or of Spencer's "Synthetic Philosophy", rather than of a distinctive treatise on society, and much of its subject matter covers ground which the philosopher and psychologist have regarded as theirs. Of course there can be no valid objection to this, if the material is so treated as to yield new or better results than at the hands of former workers. Philosophers since Plato have written of society; there is no reason why the sociologist should not write philosophy and psychology. Social and genetic psychology are certainly not so far advanced as to be disposed to reject aid from any source. At the same time, it is almost inevitable that the writer who comes to these fields from a different line of work should fail to be acquainted with the history of investigation, or at least should miss the full significance of the past century of criticism and revision, even when certain aspects of it are known. Certain points in which the author appears not to be in agreement with the views of philosophy and psychology will be noted farther on.

The book is divided into three main sections: "Taxis," "Genesis," and "Telesis." One would not begrudge a new science any needful assistance in the way of technical terms, and so one is willing to accept "taxis" instead of scope and method, and "telesis" for the treatment of phenomena which result from intention or design; but it seems quite undesirable to give the perfectly well-established terms 'genesis' and 'genetic,' a meaning at once narrower and broader than that of current usage. For the author means by genesis not "coming into being," or origination in general, but only processes characterized by the absence of intention, and calls the drifting of an iceberg a 'genetic' process.

Perhaps the author would not care to press this meaning of genetic in his definition of sociology as being a 'genetic' product from the other sciences; for, although he says that the special sciences 'spontaneously generate it,' he yet might allow some element of purpose or intention in the ordering of the materials.

As in the author's former works, the line is sharply drawn between the dynamic and the directive agency. The dynamic agency is declared to be feeling, or the 'subjective' ('subjective' is apparently used as a synonym for 'relating to the organism'); the directive agency is the intellect. "The distinction is generic and there are no

intermediate stages or gradations from one to the other." One is a force, the other is a relation (p. 457). From the former, and by 'genetic' processes, spring not only desire and will but all forces, moral, æsthetic, and intellectual. The latter, viz., the directive agency having as its root 'indifferent' sensation (as opposed to the 'intensive,' or pleasure-pain sensation which is the basis of feeling) gives rise to 'advantageous' and 'non-advantageous' faculties.

The question at once arises: Is this division between dynamic and directive agency, regarded by the author as absolute, or only as a convenient abstraction in treating certain aspects of a complex human nature in which directive and dynamic agencies are constantly and reciprocally shaping or affecting each other? If we could suppose that the author views the division merely as an abstraction, there is much in the treatment with which the psychologist could heartily sympathize. For Dr. Ward makes a serious attempt to trace the origin and growth of conation and pleasure-pain feeling, on the one hand, and of intellect, on the other, and the psychologist's treatment of these topics, while not so entirely non-existent as the author seems to think, is still very meagre. If the author would write impulse or conation for feeling (as has been pointed out in reviews of his previous works), present psychology would go along with him in giving this a relative priority to intellect. We may properly call the instincts, feelings, and passions the driving forces in society.

But the distinction does not seem to be taken merely as a convenient abstraction. The claim is frequently made that we have to do with distinct agents governed by distinct laws. "Social forces are natural forces and obey mechanical laws. . . . This is as true of the spiritual as of the physical forces" (p. 462). Where there is purpose, other laws must be sought. The conception of 'idea forces,' which in bringing out the motor nature of consciousness has certainly performed important service, is said to involve a psychological jumble.

The author is indeed aware that conation as it develops implies some ideation, but his treatment of this is certainly nothing less than naïve. In explaining desire (p. 137), it is noted that "desire presupposes memory, which must therefore be one of the earliest aspects of mind." (It seems fair to suppose that 'mind' here stands for intellect or objective mind, *cf.* the collocation on p. 176.) The explanation now follows: "In fact memory is nothing but the persistent representation of feeling, continued sense vibrations after the stimulus is withdrawn, and involves no mystery." There is apparently no consciousness in the author's mind of the mixed category involved in

the phrase 'sense vibration,' and no difficulty in identifying 'representation' and memory with continued vibration. And lest it be thought that the 'vibration' is merely a metaphorical term which is not intended literally, the next sentence amplifies the point and shows how there is 'no mystery.' "Just as a bell will continue for a time to ring after the clapper ceases to beat upon it, so the nerve fibers or protoplasmic gelatine, continues to vibrate for a time after the object, agreeable or the reverse, is no longer in contact with it"; and a little later we have the phrase 'mnemonic vibration.' There has been some progress in psychology since Hobbes, and while it goes without saying that the psychologist supposes some nervous process,— not quite so simple, perhaps, as that of mechanical inertia,— it is also true that modern psychology is aware that it cannot solve psychological problems by physical or biological categories.

Dr. Ward has indeed elsewhere (p. 79 ff.) expressed his appreciation of a principle which, if carried through consistently, would have led to the reconstruction of his work. This is the principle which Wundt calls 'Creative Synthesis' and states: "There is absolutely no form which, in the meaning and value of its content, is not something more than the mere sum of its factors or more than the mere mechanical resultant of its components." The principle is, of course, as old in essence as Aristotle, and has been prominent since Kant, but its full methodological significance is not always seen. Dr. Ward uses it to make possible a connected history of the successively higher products of nature, from ether through chemical elements, organic compounds, protoplasm, to man and society. Each higher product has a new and distinctive property (pp. 92 ff.). Every modern worker assumes that there must be such historic continuity; but this principle by no means explains anything. To use it as an explanation would be as unscientific as to suppose that 'evolution' is itself an explanation rather than a problem. 'Creative synthesis' and 'evolution' are both more fruitful ways of stating the problem, but they are statements, not solutions. For the principle in question calls attention to the fact that we have not explained any form completely by analyzing it into its factors and components. So long as we remain scientists in a limited field, it means, therefore, that the biologist cannot complete his work by a chemical statement, nor a psychologist his by a biological — much less by a mechanical statement. For the new content demands its own treatment. If, however, we become metaphysicians as well as scientists, in the sense of trying to read the process as a whole, then, as Aristotle taught, the principle means that the earlier must be read in the light of the completed process as truly as *vice versa*.

The use of the term 'natural' is also somewhat irritating to the student who is familiar with the ambiguities in that term and with the controversies which have raged. To him it does not seem "a paradox that the artificial is superior to the natural," if by natural we mean what is devoid of intelligence. Nor does it seem important to argue that all faculties have a natural origin, if we use the term nature as comprehending all experience. But, at the same time, such an account of the origin of perception and reason as is found on pp. 477 ff. will be far from satisfactory. 'Perception of relations,' which is here made so easy, involves far more complex processes than are here suggested. Numerous other illustrations could be given of what to the student of philosophy and psychology must appear as instances of explanations which ignore the difficult points of the problem. The psychology of the book will in general be likely to serve a purpose by provoking the psychologist to give fuller treatment to genetic problems, rather than as a positive solution.

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Principia Ethica. By GEORGE EDWARD MOORE. Cambridge, at the University Press, 1903. — pp. xxvii, 232.

"One main object of this book," says the author, may "be expressed by slightly changing one of Kant's famous titles. I have endeavored to write 'Prolegomena to any future Ethics that can possibly pretend to be scientific'" (p. ix).

Fortunately for the reviewer, Mr. Moore has made the task of presenting the fundamental theses advocated by him an easy matter, for at the end of each chapter one finds an adequate summary of the preceding discussions. By quoting these summaries the reviewer can therefore put the reader in possession of the contents of the book. As most of the points urged cannot be debated without occupying more space than a review puts at one's command, there will be no attempt to criticise the positions taken by the author. Many of them seem to be extremely questionable, and the arguments employed to support them are often more ingenious and subtle than convincing, but this is not the place to canvass them satisfactorily.

At the close of the first chapter, which deals with "The Subject-Matter of Ethics," Mr. Moore tells us that he has "endeavoured to enforce the following conclusions. (1) The peculiarity of Ethics is not that it investigates assertions about human conduct, but that it investigates assertions about that property of things which is denoted by the

term 'good,' and the converse property denoted by the term 'bad.' It must, in order to establish its conclusions, investigate the truth of *all* such assertions, *except* those which assert the relation of this property only to a single existent. (2) This property, by reference to which the subject-matter of Ethics must be defined, is itself simple and indefinable. And (3) all assertions about its relation to other things are of two, and only two, kinds: they either assert in what degree things themselves possess this property, or else they assert causal relations between other things and those which possess it. Finally, (4) in considering the different degrees in which things themselves possess this property, we have to take account of the fact that a whole may possess it in a degree different from that which is obtained by summing the degrees in which its parts possess it" (p. 36). This last fact Mr. Moore designates by the name of "the principle of organic unities."

The second chapter is entitled "Naturalistic Ethics." "In this chapter," says he, "I have begun the criticism of certain ethical views, which seem to owe their influence mainly to the naturalistic fallacy — the fallacy which consists in identifying the simple notion which we mean by 'good' with some other notion. They are views which profess to tell us what is good in itself; and my criticism of them is mainly directed (1) to bring out the negative result, that we have no reason to suppose that which they declare to be the sole good, really to be so, (2) to illustrate further the positive result, already established in Chapter I, that the fundamental principles of Ethics must be *synthetic* propositions, declaring what things, and in what degree, possess a simple and unanalysable property which may be called 'intrinsic value' or 'goodness.' The chapter began (1) by dividing the views to be criticised into (*a*) those which, supposing 'good' to be defined by reference to some supersensible reality, conclude that the sole good is to be found in such a reality, and may therefore be called 'Metaphysical,' (*b*) those which assign a similar position to some natural object, and may therefore be called 'Naturalistic.' Of naturalistic views, that which regards 'pleasure' as the sole good has received far the fullest and most serious treatment and was therefore reserved for Chapter III: all other forms of Naturalism may be first dismissed, by taking typical examples. (2) As typical of naturalistic views, other than Hedonism, there was first taken the popular commendation of what is 'natural': it was pointed out that by 'natural' there might here be meant either 'normal' or 'necessary,' and that neither the 'normal' nor the 'necessary' could be seriously supposed to be always

good or the only good things. (3) But a more important type, because one which claims to be capable of system, is to be found in 'Evolutionistic Ethics.' The influence of the fallacious opinion that to be 'better' *means* to be 'more evolved' was illustrated by an examination of Mr. Herbert Spencer's Ethics; and it was pointed out that, but for the influence of this opinion, Evolution could hardly have been supposed to have any important bearing upon Ethics" (p. 58).

The third chapter is on "Hedonism." "The most important points," we are told, "which I have endeavoured to establish in this chapter are as follows. (1) Hedonism must be strictly defined as the doctrine that 'Pleasure is the only thing which is good in itself': this view seems to owe its prevalence mainly to the naturalistic fallacy, and Mill's arguments may be taken as a type of those which are fallacious in this respect; Sidgwick alone has defended it without committing this fallacy, and its final refutation must therefore point out the errors in his arguments. (2) Mill's 'Utilitarianism' is criticised: it being shown (*a*) that he commits the naturalistic fallacy in identifying 'desirable' with 'desired'; (*b*) that pleasure is not the only object of desire. The common arguments for Hedonism seem to rest on these two errors. (3) Hedonism is considered as an 'Intuition,' and it is pointed out (*a*) that Mill's allowance that some pleasures are inferior in quality to others implies both that it is an Intuition and that it is a false one; (*b*) that Sidgwick fails to distinguish 'pleasure' from 'consciousness of pleasure,' and that it is absurd to regard the former, at all events, as the sole good; (*c*) that it seems equally absurd to regard 'consciousness of pleasure' as the sole good, since, if it were so, a world in which nothing else existed might be absolutely perfect: Sidgwick fails to put to himself this question, which is the only clear and decisive one. (4) What are commonly considered to be the two main types of Hedonism, namely, Egoism and Utilitarianism, are not only different from, but strictly contradictory of, one another; since the former asserts 'My own greatest pleasure is the *sole* good,' the latter 'The greatest pleasure of all is the *sole* good.' Egoism seems to owe its plausibility partly to the failure to observe this contradiction — a failure which is exemplified by Sidgwick; partly to a confusion of Egoism as doctrine of end, with the same as doctrine of means. If Hedonism is true, Egoism cannot be so; still less can it be so, if Hedonism is false. The end of Utilitarianism, on the other hand, would, if Hedonism were true, be, not indeed the best conceivable, but the best possible for us to promote; but it is refuted by the refutation of Hedonism" (pp. 108 f.).

The fourth chapter deals with "Metaphysical Ethics." "The main object of this chapter has been to show that Metaphysics, understood as the investigation of a supposed supersensible reality, can have no logical bearing whatever upon the answer to the fundamental ethical question 'What is good in itself?' That this is so, follows at once from the conclusion of Chapter I., that 'good' denotes an ultimate, unanalysable predicate; but this truth has been so systematically ignored, that it seemed worth while to discuss and distinguish in detail the principal relations, which do hold, or have been supposed to hold, between Metaphysics and Ethics. With this view I pointed out:—(1) That Metaphysics may have a bearing on *practical* Ethics — on the question 'What ought we to do?' — so far as it may be able to tell us what the future effects of our action will be: what it can *not* tell us is whether those effects are good or bad in themselves. One particular type of metaphysical doctrine, which is very frequently held, undoubtedly has such a bearing on *practical* Ethics: for, if it is true that the sole reality is an eternal, immutable Absolute, then it follows that no action of ours can have any real effect, and hence no *practical* proposition can be true. The same conclusion follows from the ethical proposition, commonly combined with this metaphysical one — namely, that this eternal Reality is also the sole good. (2) That metaphysical writers, as where they fail to notice the contradiction just noticed between any *practical* proposition and the assertion that an eternal reality is the sole good, seem frequently to confuse the proposition that one particular existing thing is good, with the proposition that the existence of that kind of thing *would* be good, wherever it might occur. To the proof of the former proposition Metaphysics might be relevant, by shewing that the thing existed; to the proof of the latter it is wholly irrelevant: it can only serve the *psychological* function of suggesting things which may be valuable — a function which would still be better performed by pure fiction.

"But the most important source of the supposition that metaphysics is relevant to Ethics, seems to be the assumption that 'good' *must* denote some *real* property of things — an assumption which is mainly due to two erroneous doctrines, the first *logical*, the second *epistemological*. Hence (3) I discussed the *logical* doctrine that all propositions assert a relation between existents; and pointed out that the assimilation of ethical propositions either to natural laws or to commands are instances of this *logical* fallacy. And finally (4) I discussed the *epistemological* doctrine that to be good is equivalent to being willed or felt in some particular way; a doctrine which derives support from

the analogous error, which Kant regarded as the cardinal point of his system and which has received immensely wide acceptance — the erroneous view that to be 'true' or 'real' is equivalent to being thought in a particular way. In this discussion the main points to which I desire to direct attention are these: (*a*) That Volition and Feeling are *not* analogous to Cognition in the manner assumed; since in so far as these words denote an attitude of the mind towards an object, they are themselves merely instances of Cognition: they differ only in repect of the kind of object of which they take cognisance, and in respect of the other mental accompaniments of such cognitions: (*b*) That universally the *object* of a cognition must be distinguished from the cognition of which it is the object; and hence that in no case can the question whether the object is *true* be identical with the question how it is cognised or whether it is cognised at all: it follows that even if the proposition 'This is good' were always the object of certain kinds of will or feeling, the *truth* of that proposition could in no case be established by proving that it was their object; far less can that proposition itself be identical with the proposition that its subject is the object of a volition or a feeling" (pp. 139–141).

Chapter V deals with the "Ethics in Relation to Conduct." "The main points in this chapter, to which I desire to direct attention, may be summarised as follows: — (1) I first pointed out how the subject-matter with which it deals, namely ethical judgments on conduct, involves a question, utterly different in kind from the two previously discussed, namely: (*a*) What is the nature of the predicate peculiar to Ethics? and (*b*) What kinds of things themselves possess this predidate? Practical Ethics asks, not, 'What ought to be?' but 'What ought we to do?'; it asks what actions are *duties*, what actions are *right*, and what *wrong*: and all these questions can only be answered by showing the relation of the actions in question, as *causes* or *necessary conditions*, to what is good in itself. The enquiries in Practical Ethics thus fall entirely under the *third* division of ethical questions — questions which ask, 'What is good as a means?' which is equivalent to 'What is a means to good — what is cause or necessary condition of things good in themselves?' But (2) it asks this question, almost exclusively, with regard to actions which it is possible for most men to perform, if only they *will* them; and with regard to these, it does not ask merely, which among them will have *some* good or bad result, but which, among all the actions possible to volition at any moment, will produce the best *total* result. To assert that an action is a duty, is to assert that it is such a possible action, which will *always*, in

certain known circumstances, produce better results than any other. It follows that universal propositions of which duty is predicate, so far from being self-evident, always require a proof, which it is beyond our present means of knowledge ever to give. But (3) all that Ethics has attempted or can attempt, is to shew that certain actions, possible by volition, *generally* produce better or worse total results than any probable alternative: and it must obviously be very difficult to show this with regard to the total results even in a comparatively near future; whereas that which has the best results in such a near future, also has the best on the whole, is a point requiring an investigation which it has not received. If it is true, and if, accordingly, we give the name of 'duty' to actions which *generally* produce better total results in the near future than any possible alternative, it may be possible to prove that a few of the commonest rules of duty are true, but *only* in certain conditions of society, which may be more or less universally presented in history; and such a proof is only possible *in some cases* without a correct judgment of what things are good or bad in themselves — a judgment which has never yet been offered by ethical writers. With regard to actions of which the *general* utility is thus proved, the individual should *always* perform them; but in other cases, where rules are commonly offered, he should rather judge of the probable results in his particular case, guided by a correct conception of what things are intrinsically good or bad. (4) In order that any action may be shown to be a duty, it must be shown to fulfill the above conditions; but the actions commonly called 'duties' do not fulfill them to any greater extent than 'expedient' or 'interested' actions: by calling them 'duties' we only mean that they have, *in addition*, certain non-ethical predicates. Similarly by 'virtue' is mainly meant a permanent disposition to perform 'duties' in this restricted sense: and accordingly a virtue, if it is really a virtue, must be good *as a means*, in the sense that it fulfills the above conditions; but it is not *better* as a means than non-virtuous dispositions; it generally has no value in itself; and, where it has, it is far from being the sole good or the best of goods. Accordingly 'virtue' is not, as is commonly implied, an unique *ethical* predicate" (pp. 180–182).

The final chapter discusses "The ideal." "The main object of this chapter has been to define roughly the class of things among which we may expect to find either great intrinsic goods or great intrinsic evils; and particularly to point out that there is a vast variety of such things, and that the simplest of them are, with one exception, highly complex wholes, composed of parts which have

little or no value in themselves. All of them involve consciousness of an object, which is itself usually highly complex, and almost all involve also an emotional attitude toward this object; but, though they thus have certain characteristics in common, the vast variety of qualities in respect of which they differ from one another are equally essential to their value: neither the generic character of all, nor the specific character of each, is either greatly good or greatly evil by itself; they owe their value or demerit, in each case, to the presence of both. My discussion falls into three main divisions, dealing respectively (1) with unmixed goods, (2) with evils, and (3) with mixed goods. (1) Unmixed goods may all be said to consist in the love of beautiful things or of good persons: but the number of different goods of this kind is as great as that of beautiful objects, and they are also differentiated from one another by the different emotions appropriate to different objects. These goods are undoubtedly good, even where the things or persons loved are imaginary; but it was urged that, where the thing or person is real and is believed to be so, these two facts together, when combined with the mere love of the qualities in question, constitute a whole which is greatly better than that mere love, having an additional value quite distinct from that which belongs to the existence of the object, where that object is a good person. Finally it was pointed out that the love of mental qualities, by themselves, does not seem to be so great a good as that of mental and material qualities together; and that, in any case, an immense number of the best things are, or include, a love of material qualities. (2) Great evils may be said to consist either (*a*) in the love of what is evil or ugly, or (*b*) in the hatred of what is good or beautiful, or (*c*) in the consciousness of pain. Thus the consciousness of pain, if it be a great evil, is the only exception to the rule that all great goods and great evils involve both a cognition and an emotion directed toward its object. (3) Mixed goods are those which include some element which is evil or ugly. They may be said to consist either in hatred of what is ugly or of evils of classes (*a*) and (*b*), or in compassion for pain. But where they include an evil, which actually exists, its demerit seems to be always great enough to outweigh the positive value which they possess" (pp. 224–225).

These summaries show the great number of questions which Mr. Moore attacks; and it is remarkable that in the compass of a book of only a little more than two hundred pages he can treat them all so fully as he does. But as has already been stated above, his discussions are anything but satisfactory. His main thesis that the predicate

'good' means a quality that is unique and unanalyzable is ably defended, but the reviewer is left with the impression that more dialectical skill than sound judgment on matters of fact is displayed.

This review should not close without a word with regard to the great aid which the author gives his reader toward an easy understanding of his position. There is a table of contents, occupying fourteen pages. Here the central point of each section, — one hundred and thirty-five in all, — is given in a single sentence. By reading this table of contents anyone can see clearly what the book stands for even in its details. Then the summaries which have been quoted in this review recapitulate chapter by chapter the main points established. In addition to this there is an Index of six pages. Mr. Moore surely is indulgent to his reader, who cannot but be duly grateful for this assistance.

The work as a whole should be in the hands of every advanced ethical student, not so much because he will find in it solutions of problems that have been occupying him, but because he will find there extremely clear statements of these problems themselves. And although it may not be true, as Mr. Moore seems to think, that the difficulties and disagreements of which the history of ethics is full "are mainly due to a very simple cause: namely to the attempt to answer questions, without first discovering precisely *what* question it is that you desire to answer" (p. vii), still it is true that such a preliminary effort to comprehend the question at issue does much to clear up thought.

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Kant: Sein Leben und seine Lehre. Von M. KRONENBERG. Zweite neubearbeitete und erweiterte Auflage. München, C. H. Beck. 1904. — pp. x, 403.

That Dr. Kronenberg's book has some measure of popularity in Germany may be inferred from the fact that it has reached a second edition, though no doubt the special interest aroused by the recent celebrations in connection with the centenary of the philosopher's death has something to do with the demand for popular expositions of Kantian ideas just at this moment. As I have not seen the original edition of Dr. Kronenberg's work, I am unable to say anything as to the nature of the modification and expansion to which the author has subjected it. In its present form it has several good points as an account for the general reader of Kant's life and his significance in t e history of modern thought. The four chapters of the first part con-

tain a full biography of the philosopher, with a sympathetic estimate of his character and a clear and useful sketch of the development of his thought in the pre-critical era, — a topic usually too lightly passed over in the current expositions. On one or two points Dr. Kronenberg is perhaps a little less critical than might have been desired. Thus he reproduces without any mistrust the story of Kant's supposed Scottish ancestry upon which recent investigation has cast doubts, of which, by the way, the Premier of Great Britain seems as ignorant as he professes to be of the contents of the daily newspapers. And English and American readers, at any rate, while they agree with the author's protest against the bad taste which has coupled Kant with Frederick William II. on the monument in the Berlin *Sieges-Allee*, will probably decline to take as seriously as it is meant the suggestion that in virtue of their common "ethical elevation" the philosopher should have been associated with Frederick the Great.

The exposition of Kant's critical philosophy which fills Chapters v–ix has the double merit of close fidelity to the original texts and successful avoidance of the mere reproduction of Kantian technicalities, and may, on the whole, be warmly recommended to the general reader who desires, without becoming a special student of philosophy, to obtain an intelligent and detailed conception of Kant's views as to the general character of human mental activity, and the grounds on which those views are based. The chief defect in Dr. Kronenberg's exposition, as well as in the brief chapter on the "Subsequent Influence of Kant's Philosophy" with which the book closes, is, in my own opinion, that he is content to play too much the part of the mere admiring expositor, and is too little alive to the gravity of the objections which recent advances, especially in empirical psychology and in pure mathematics, have made it possible to urge against the fundamental doctrines of the Kantian *Erkenntnisstheorie*. In such criticisms as Dr. Kronenberg permits himself, he appears as, on the whole, more in sympathy with Schopenhauer than with any other idealistic continuator of Kantian views. Thus he makes it a reproach to Kant in his concluding chapter that he was too much under the spell of the eighteenth century rationalism to do justice to the irrational element which is everywhere present in human life. Similarly, in the chapter headed "Philosophie des Zweckes," Dr. Kronenberg insists in the spirit of Schopenhauer upon "will-less contemplation" as the characteristic attitude of æsthetic appreciation. Whatever the merits of this view may be, as a piece of purely æsthetic theory (and even as æsthetic theory, it is open to the obvious criticism that it takes no account at

all of the mental attitude of the artist himself to his work), it is surely difficult to reconcile it as part of a comprehensive *Weltanschauung* with such whole-hearted championship of the 'practical reason' as the essence of human nature as Dr. Kronenberg has displayed in his previous account of the Kantian ethics. Indeed, I should be inclined to regard it as a very serious defect that the author, while repeatedly and emphatically proclaiming the 'primacy of will' as one of his chief philosophical tenets, has completely forgotten to explain whether he means the doctrine to be taken in the Kantian or in the radically different Schopenhauerian sense. It can hardly be that the omission is due to failure to recognize so obvious a difference.

For the rest, I trust I may be pardoned, in view of the interest naturally created by the Kant Centenary, if I devote this notice mainly not to Dr. Kronenberg, but to Kant himself. Now that Kant has been a hundred years in his grave, there can be no irreverence towards a great name in seriously asking ourselves whether the foundations of the Kantian doctrine are so firmly laid as most of us have been taught to believe. Has Kant really been the Moses commissioned to lead us into a land of philosophic promise, or are there grounds for suspecting that after all he has brought us out to perish in the wilderness? There seem to me grave reasons why we should at least allow the *advocatus diaboli* to get a hearing, and I suspect that one result of the hearing would be to moderate very considerably the claims made by the more enthusiastic Kantians for their master, while another would certainly be to revive the interest in those great constructive thinkers of the seventeenth century whom Kant, apparently without any real comprehension of their meaning, has taught philosophers for the last hundred and twenty years to dismiss with an epithet as 'Dogmatists.'

Kant's claim to be the central figure of modern philosophy must manifestly be accepted or rejected according as we accept or reject the doctrine of the first *Critique* on the limits and nature of knowledge. If the peculiar agnosticism of the first *Critique* should be proved untenable, then no number of profound incidental criticisms of life and morals such as the most determined anti-Kantian must admit to abound, *e. g.*, in the *Metaphysik der Sitten*, can save the credit of the Kantian system as a whole. Now the first *Critique*, while open to attack in all its parts, has of late been subjected to especially severe attack in its two most vital parts, the *Æsthetik* and the Antinomies of the *Dialektik*. Why I speak of these as the vital parts of the *Critique* should be at once apparent. If the doctrine of the *Æsthetik* as to the connection of mathematical truths with the 'forms of intuition' can be over-

thrown, the Kantian theory of knowledge will be shorn of its one really distinctive positive feature; while, if the Antinomies do not really *prove* contradictory results, the whole Kantian theory of the necessary limitations of knowledge is left without any proof except such proof as may be drawn from the consideration that some philosophers have committed paralogisms about God and the soul. Without the Antinomies, the *Critique of Pure Reason* would contain no solid ground whatever for denying that we may have a real and valid knowledge of objects which have never been presented as wholes in sense-perception. And without this denial what would be left of the Kantian system?

Now the *Æsthetik* in particular has been attacked from two quite distinct quarters, and in both cases, as it seems to the present writer, with complete success. To begin with, it is a difficulty we must all have felt about the Kantian doctrine of space and time that it is in part psychology, and, as such, amenable to the criticism of the empirical psychologist. And there seems little doubt that modern psychology will definitely accept Professor James's rejection of the whole method of the "Kantian machine-shop," in which a purely timeless and spaceless "manifold of sensation" is by some mysterious process worked up into temporal and spatial order *ab extra*. For my own part, at any rate, I can find no warrant in my experience for the theory of the double origin of the content of perception, on the one hand, and its form, on the other, which Dr. Kronenberg, like a good Kantian, repeats as if no doubt had ever been cast on any of its parts. It might not be impossible, perhaps, to disentangle Kant's logical conclusions from the medley of antiquated psychological errors which he offers as their ground, and to present the result in a form not open to the strictures of the psychologist, but so far as I know the thing has never yet been done, at any rate by our English and American Kantians. Till this is done, I contend, they are absolutely debarred from advancing the propositions of the *Æsthetik* as admitted philosophic truth, or even as ἔνδοξα in the Aristotelian sense, "things admitted by the wise, or by the majority of them."

Even more formidable are the objections which the labors of modern mathematicians have made it possible to urge against the logical positions of the *Æsthetik* themselves. Philosophers, I fear, are still too largely unaware of the absolute contradictions which exist on almost every point of importance between Kantianism and the well-established results of modern mathematical theory. I shall therefore beg leave to refer briefly to one or two of these contradictions, especially

as they seem entirely unknown to Dr. Kronenberg, who is thus in the position of defending a fortress in ignorance of the situation of its most exposed points.

1. Space and time, as studied by mathematical science, have no special connection with sensuous intuition, but are merely two among other special cases of the more general concept of serial order. This truth had already been clearly and repeatedly enunciated by Leibniz, and it is not the least of Kant's disservices to logic that his influence has long prevented, and still continues to prevent, philosophers from recognizing the essential superiority of his predecessor in the logic of the mathematical sciences. Even the devoted Kantian, however, should be able to see for himself that in *number* we have a form of order essentially independent of space and time and devoid of any special connection with sensuous intuition.

2. The one thing that seems certain about the space and time of mathematical science, though it is expressly denied by Kant, is that they are *concepts*, and in fact *class*-concepts. Space, for the geometer, is now known to be simply the class or aggregate of *points*, *i.e.*, of all terms which can be defined by a peculiar complex of intelligible inter-relations which it is the business of the logician to enumerate and distinguish. Time, in the only sense in which it can be the object of scientific analysis, is similarly the class or aggregate of *moments*. Hence it follows that it is a mere accident for our mathematical knowledge that the space and time of sensuous perception happen to afford instances of the defining relations by which the respective classes of points and moments are constituted. Any other group of terms which satisfy our constitutive relations may equally well be included under our mathematical concept of points or moments.

3. It follows that the demonstrations of geometry are dependent solely on rigid logical deduction from our original definitions and postulates, and absolutely independent of the construction of the diagrams which we may employ as aids to the imagination. Indeed, a geometrical conclusion which, like so many propositions of Euclid (*e. g.*, I 1, I 4, I 32) involves an appeal to sensuous intuition of a diagram, is logically not demonstrated at all, and its truth must remain problematic until some one succeeds in providing a purely symbolic proof, *i. e.*, a proof which rests only on rigid logical deduction and is independent of diagrams. Kant, as Mr. Russell has recently told us, may be held largely excusable for his mistake on this score, seeing that in his time there was possibly no single really valid piece of mathematical reasoning in existence. It is less excusable in Dr. Kro-

nenberg to talk of Euclid as having once for all laid down the final principles of geometrical method, and to cite as his stock instance of a certain universal truth a proposition (I 32) which we actually *know* to depend upon the purely empirical Euclidean postulate of parallelism, and thus to be true only for spaces conformable to that postulate.

4. Neither Kant nor any of his followers has ever adduced any serious reason for the belief that arithmetic depends upon sensuous intuition. Indeed, it is not easy to understand what such a statement would mean, and I suspect that it owes its presence in the Kantian philosophy solely to the illogical inference that, if geometry depends for its demonstrations on diagrams, as Kantianism falsely asserts, arithmetic must have a similar dependence on something sensuous, though we may be entirely unable to say what that something is. That the proposition in question is false, might have been at once inferred from the simple consideration that we can count and perform all the operations which arise from counting upon objects (*e. g.*, pure concepts, acts of attention, etc.) which involve no element of sensuous perception. Its falsity is not more conclusively, though undoubtedly more strikingly demonstrated *a posteriori* by the successful extension of arithmetic to the transfinite numbers, objects which from their very nature are incapable of being obtained by the actual counting of sensible things. Kant has, however, the merit of having avoided the exquisitely silly conclusion of some of his expositors that arithmetic must depend for its proofs on the intuition of time, because it takes time to count.

Until these objections to Kant's *Æsthetik* have been seriously met, it seems fair to infer that all that is peculiar to Kant in his theory of mathematical knowledge is at least under grave suspicion of falsity, and that the only Kantian position which is certainly valid is the assertion, common to Kant with the despised 'Dogmatists,' Plato, Descartes, Spinoza, Leibniz, that mathematical truths are certain and universal, and therefore non-empirical. Whether, because *a priori* in the sense of being non-empirical, they are also *a priori* as being in a special sense 'the work of the mind,' appears to be an entirely different issue.

I have spoken at such length of the apparent paralogisms of the *Æsthetik* that I must be content with a very brief indication of similar weaknesses in the *Analytik* and *Dialektik*. The *Analytik*, again, presents a difficulty owing to its extraordinary jumbling up of logic with psychology. Until I had read Dr. Kronenberg, I had supposed that even the most ardent Kantian must feel some misgivings about the whole tribe of faculties and operations which figure in the deduction

and schematism of the categories. Apparently I was mistaken. Shall I be equally mistaken in thinking that these faculties and their operations have at least no place in a scientific psychology?

More serious ground for dissatisfaction is afforded by the perfunctory treatment given by the *Critique* to the logical forms of judgment themselves. Nowhere does Kant appear less favorably in comparison with Leibniz than when we contrast the modicum of school logic borrowed by Kant from the text-books as the foundation of the scheme of categories with the systematic logical researches of his predecessor which, as we now know, thanks to M. Couturat, were extended over a life-time, and succeeded in anticipating the most remarkable achievement of the nineteenth century in the realm of pure thought, the creation of the logical calculus of Boole.

There remains the *Dialektik*, as to which I have only the space to observe that it is really not creditable on the part of Kant's disciples to repeat the famous antinomies without some attempt to justify their logical characters against the trenchant criticisms, *e. g.*, of Mr. Russell and M. Couturat. It cannot ever be urged in defense that the antinomies hold the floor and that the burden of proof rests with their assailants. The work already done in recent times upon the transfinite numbers has at any rate shifted the *onus probandi* from the shoulders of the consistent 'infinitist,' with whom it remained from Aristotle's days until our own, to those of the orthodox Kantian agnostic who maintains the impossibility of genuine scientific knowledge of the 'transcendent.' But if knowledge of the 'transcendent' be once admitted, in the comparatively harmless form of knowledge of the properties of the numerical infinite, what becomes of the pretended demonstration that God and the soul, because 'transcendent' objects, must be purely unknowable, though it is morally edifying to make certain logically groundless affirmations about them?

I trust the foregoing reflections will not be censured for deficiency in reverence towards a great philosophical reputation. Assuredly for all of us Kant's intellectual greatness and the inspiration of his life must remain unaffected by our judgment upon his peculiar logical theories. My interest is not even primarily to meet uncritical overlaudation of Kant by countervailing depreciation. What I hope even these few hurried reflections may help to do is, in the first place, to call attention to the pressing need for us to get back from Kantian prejudices to the study of Kant's greater predecessor, Leibniz, now at last being made possible by the labors of M. Couturat, and next to impress on any readers who may peruse these lines the need for a

fresh re-examination of the problem of the transcendent object. If the transcendent should prove to be knowable, many current philosophies, notably Phenomenalism and Pragmatism, which have thriven by popularizing and caricaturing the ideas of the *Dialektik*, will need to revise their first principles.

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SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *American Journal of Psychology*; *Am. J. Th.* = *The American Journal of Theology*; *Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie*; *Ar. f. sys. Ph.* = *Archiv für systematische Philosophie*; *Br. J. Ps.* = *The British Journal of Psychology*; *Int. J. E.* = *International Journal of Ethics*; *J. de Psych.* = *Journal de Psychologie*; *Psych. Rev.* = *Psychological Review*; *Rev. de Mêt.* = *Revue de Mètaphysique*; *Rev. Nèo.-Sc.* = *Revue Nèo-Scolastique*; *R. d. Fil.* = *Rivista di Filosofia e Scienze Affini*; *V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie*; *Z. f. Psych. u. Phys.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*. — Other titles are self-explanatory.]

LOGIC AND METAPHYSICS.

Kant's Transcendental Idealism and Empirical Realism. C. M. WALSH. Mind, 48, pp. 454–472; 49, pp. 54–71.

Premising that by idealism Kant understood a doctrine of unreality, by realism the contrary, we may name four doctrines which he held, and four which he rejected. Those he held are: (1) transcendental idealism of intuitions and phenomena; (2) empirical idealism of things-in-themselves; (3) transcendental realism of things-in-themselves; (4) empirical realism of intuitions and phenomena. The four opposite doctrines he rejected. But in those he held, while (1) and (3) are perfectly consistent with themselves and with each other, (4) is not self-consistent, or altogether consistent with (1) and (3). Kant has given two distinct accounts of this empirical realism. In one the phenomenally real *is* the matter of our sense-perceptions, or simply our sensations themselves; or the empirically real is only either the by us experienced or the by us experienceable. In the other the phenomenally real is that which *corresponds* to the matter of our sense-perceptions, or simply to our perceptions. Phenomenal objects, on the one definition, cannot exist apart from our perception; on the other, they can. This doubleness of Kant's empirical realism is most apparent in his treatment of unexperienced real phenomenal objects. The first form of it is consistent with his transcendental idealism and his transcendental realism, (1) and (3); but the second is not. This second and inconsistent form arises from Kant's speaking of one time and of one space, forgetting that there must be as many distinct though similar times and spaces as there are distinct persons, and even going further to speak of one experience, one consciousness, and, as a consequence, one phenomenal world and one nature. On this view, phenomenal objects exist outside us in an outside space and time, and correspond to our representations. Yet they are not transcendental, but empirically real, because they are objects in an experience. The adoption of this form of realism is facilitated by four ambiguities. 'Outside me' is ambiguously used by

Kant to express both spatial and transcendental externality. 'Inside me' is used to describe both the non-spatial objects as *merely* successive in time, and, in a wider sense, to cover objects extended in space, since these are also successive in time. This wider use is more prominent in the second edition of the *Critique*. 'Phenomenon' is also ambiguously used to mean both the appearance of a thing and that which appears, and thus phenomena become both subjective and objective. Still another ambiguity exists as to the 'analogies' or principles of the understanding. In the Analytic they are distinguished as constitutive or regulative; as to experience they are all constitutive; but in the Dialectic the constitutive principles are frequently treated as nothing better than regulative principles, though they are still retained also as constitutive. Examining the second Analogy, that of the 'Principle of Production,' from this point of view, we find that, as constitutive, it fits in only with the second form of empirical realism that we have described; but, as regulative, it agrees only with the first form. Of Kant's two accounts of empirical realism, the first turns out to be not empirical realism at all, since it reduces all real sensible objects to be unreal except as states of our individual consciousnesses. And the second is really empirical idealism, since it is transcendental in placing the real objects of experience in a single experience which is not yours or mine. Whose this experience is, or how the phenomena appearing in it are caused, Kant does not tell us. Phenomenal objects outside us must be either things-in-God or things-in-themselves, and the term 'phenomena' is misleading in either sense. And since Kant states that things-in-themselves are created by, and depend upon, God, for whom they are noumena in active intuition, the transcendental, like the empirical realism, must reduce to either Berkeleyan idealism or Spinozistic pantheism, according as the subjects-in-themselves are regarded as existent or merely subsistent. Transcendental realism in respect to sensible objects in space and time Kant rejects, because it will not permit of our possessing certainty in physics and mathematics, yet on the second form of his empirical realism the sensible objects are just as far removed from the control of forms and laws in us. In fact, the only way in which his epistemological argument can be satisfied is by Solipsism. He was confused in his treatment as much in respect to phenomenal objects as to things-in-themselves, and gave to philosophy no consistent view of the world able to rank with those already founded. His originality — and his weakness — lies only in founding his system upon the argument that certain elements of thought are necessary for the possibility of certain cognitions taken as of facts.

EDMUND H. HOLLANDS.

Ist die Annahme von Absolutem in der Anschauung und dem Denken möglich? KURT GEISSLER. Ar. f. sys. Ph., IX, 4, pp. 417–432.

Because the conception of the Absolute involves difficulties, it cannot therefore be cast aside; only inherent contradiction invalidates a concep-

tion. Preliminary, however, to any discussion of the Absolute should be its careful definition. The absolutes of geometry are not so treated; the point, *e. g.*, although perceived as pertaining to space, yet lacks the tridimensional aspect which is the very essence of space, and the 'limitless,' while not free from dimension (*e. g.*, the infinite projection of a straight line has length), yet is defined as that not to be exceeded. Both these potential absolutes, again, depend upon the *a priori* functioning of the mind. What is true of these, too, is true of the absolutes of arithmetic and logic. The zero, although loosed from the contradiction of the dimensionless yet endlessly small (*i. e.*, the point), is, as derived by subtraction, not absolute; unity, whether real or a category, has always opposed to it multiplicity. In metaphysics, again, the Absolute is the 'Omnipotent,' that which, while standing in relation, still *need* not do so. Either of its leading ideals, the Schellingean Identity, wherein is neither subject nor object, or the Hegelian, "an eternally-developing spirit" wherein "the contradictory is itself brought to a higher unity," is open to objection. Here, as before, our mind is so constituted as to be powerless to grasp the Absolute, even though it exist. ARTHUR J. TIETJE.

Die Religionsidee. DAVID KOIGEN. Ar. f. sys. Ph., IX, 4, pp. 433–462.

The development of emotion is the unfolding of an immanent principle; it may be represented by the formula: $x = a, a_1, a_2, a_3, \ldots$. Single emotions, however, have real significance only in reference to one central principle; every emotion is permeated with a deep striving to surround the other emotional rings, to intermarry with them. This principle is best defined as the life-force, and its most important manifestation is the universal emotion, 'religiosity,' the incarnation of the most inner intensity and the most outer extensity. Insistence on either characteristic to the detriment of the other, *e. g.*, Nietzsche's demand for the suppression or absorption of alien extensities, or Guyau's desire to aid strange social intensities, is undesirable. But 'religiosity' is not yet the religious idea; for this intellection and volition are alike needed. That is, on one side, knowledge, striving under the categories of cause and identity to interpret the ever-changing phenomenal, brings to light, if nothing else, the principle of continuity; on the other, the will for culture, seeking the broadening and deepening of personality and the illumination of the social consciousness, together with the firm grounding of ethical ideals, testifies to the immanency of the world-idea. The development of the religious idea, accordingly, is ever toward a more perfect conception of an inner teleology; from the conquering God to the ruling God, from the corporeal to the spiritual, from the unsocial to the social, from the tribal and national to the cosmic, above all, from the external to the inherent; such has been religion's advance. Long steps, indeed, have lain between the clannish Jehovah of the Hebrews, the external yet universal Father of the Lutheran Reformation, and the present tendency toward a belief in an eternally-self-realizing Absolute; in

fact, there have been retrogressions. Finally, now, connected with the religious idea is the destiny of the individual. All religion is a recognition of his dependence upon a 'something,' be that something what it may. Does this dependence end in realization, with retention of individuality, in absorption, or in annihilation? Surely in the former of the three; the yearning for immortality is too deeply-rooted to be illusory, is the very meaning of the life-force. ARTUHR J. TIETJE.

The Disjunctive Judgment. G. R. T. ROSS. Mind, 48, pp. 489–501.

This article attacks the theory of Bosanquet and Bradley that the alternatives of a properly interpreted disjunctive judgment are mutually exclusive. They may be so in the case of *a priori* disjunction by the law of excluded middle; but in a case of real disjunction, where the alternative terms both stand for positive concepts, it would follow on this theory that the judgments '*A* is either *B* or *C*' and '*A* is either not-*B* or not-*C*' have the same meaning. This is against the meaning of language, and would destroy the compelling force of the dilemma, since its minor premise would thus always be equivalent to a corresponding negative disjunction. The logical uses of the disjunctive judgment are in the dilemma and in division. It meets both if we interpret it as merely exhaustive. The minor premise of a dilemma enters the argument only so far as it is exhaustive, and when its conclusion is disjunctive, it is proved only in so far as it is exhaustive. The chief use of the divisive judgment is in classification, and here the force of the disjunction lies in its exhaustiveness, while the exclusiveness, if present, depends upon the predicates involved in each case. And the practical value of a classification lies in its exhaustiveness, not in its exclusiveness. Theoretically and practically, therefore, the function of the disjunctive judgment is to be exhaustive, not exclusive.

EDMUND H. HOLLANDS.

L'évolution comme principe philosophique du devenir. W. M. KOZLOWSKI. Rev. Ph., XXIX, 2, pp. 113–135.

As the conception of the Cosmos reduces to a spatial whole all coexistent phenomena, so the general formula of evolution brings unity to the temporal order. The idea of evolution involves the conception of a determinate direction of all change, and a common end, or goal, of the evolutionary process. Three elements may be distinguished in the scientific conception: (1) A continual change of state in the universe; (2) the mechanical or causal character of this change; (3) a constant direction of all change, involving an end to be reached in a finite or indefinite time. While the conception of a mechanically determined evolution is as old as philosophy itself, the modern conception differs from that held by the ancients in the assumption of the irreversibility of the process. Science admits that

a particular stellar system may, owing to the gradual retardation of its motion, again reach its original state of incandescence. Yet the irreversibility of the process as a whole is the logical consequence of two postulates: the mechanical unity of the universe, and the causality implied in the principle of evolution. The constancy in direction is not reached by empirical observation, but is deduced from *a priori* principles. The assumption of complete revolution denies the determination of each state by the preceding state. The law of the growth of entropy is merely a mathematical formulation of the principle of constancy in direction, and is complementary to the conservation of energy. Conservation expresses constancy in the amount of energy, and entropy, the direction of its transformations. Were conservation the only principle, phenomena would be reversible, *e. g.*, heat might pass from a cooler to a warmer body. The law of entropy states that the chance of such reversion is infinitely small. The reversibility of a single phenomenon seems logically possible when considered in isolation from the rest of the universe. But just as this would require external intervention, so the total reversion of the evolutionary process presupposes the agency of an external God. The law of entropy is only one expression of the modern conception of the immanence of law. But while the general direction of evolution is constant, individual variations and particular phenomena retard the progress toward the final goal. Thus in the solar system the dissipation of radiant energy is partially counteracted by the absorption of heat by the planets. A new problem is presented by organic life, but concerns only its origin. Once established, organic processes are entirely subject to mechanical laws and present no exception to the laws of conservation and entropy. A more fundamental objection to the principle of evolution is brought forward by Poincaré and Maxwell in the theorem of the phase. According to this, a limited mechanical system returns to a state similar to its initial state. The strength of this objection lies in the assumption of the limitation of the system. While this was implied in the theories of the ancients, it is not admitted by modern science. The principle of a constant direction in evolution becomes a particular case of the law of periodicity, corresponding to the modern assumption of the infinite extension of the universe. A transformation of scientific ideas would, of course, make possible a different conception of evolution.

GRACE MEAD ANDRUS.

PSYCHOLOGY.

La simulation dans le charactère. F. PAULHAN. Rev. Ph., XXVIII, 10, pp. 337–365; 11, pp. 495–527.

Simulation may be either voluntary or involuntary. In either case it may be set down as a general truth that its *raison d'être* lies in its utility, in the facilities it secures for attack and defense, for living and for self-development. The stupidity of observers insures its success quite as much as

does its own excellence. Simulations vary in delicacy, accuracy, and frequency, particular kinds predominating in particular sets of psychological and social conditions. Several of the different forms are examined, beginning with those of frankness and dissimulation. Frankness means several things: hatred of lies, a moral attitude, 'expansiveness,' etc. In ordinary social intercourse, it is contrasted with reserve. The effect of the two opposed attitudes on an observer will be determined very largely by his own temperament. The motive behind both is security. Each is a means of defense and may indicate little or much as to the real character. From simple reserve to elaborate hypocrisy there is an insensible transition. The former may be a matter of temperament merely or may involve voluntary concealment. From this the passage through hypocrisy to plain lying is very gradual, and involves so many factors that it can be traced, if at all, only with extreme difficulty. A strong aversion to open lying is quite consistent with a high degree of hypocrisy. Aversion to lying and a certain degree of 'expansiveness' are the characteristics of true frankness, the presence of the latter being generally supposed to involve the former; hence the ease with which frankness may be simulated. On the other hand, it is the 'expansive' person who instinctively simulates, while the reserved person reveals more nearly his true character. Expansiveness is, however, quite as often sincere as it is a mark of simulation. Simulation has a basis of sincerity, but the importance of this in the particular case cannot be determined. There is some truth at the bottom of every lie and no sincerity is entirely free from pretense. We are constantly forced to imitate others and the hypocrisy of politeness is a social necessity. Individuals differ here by reason of their differences in the intensity of feeling, in the power of certain tendencies, etc. Other forms of simulation group around such traits as naïveté, candor, and skepticism. The first two are due largely to a lack of mental equilibrium, to want of experience and reflection. Appearances correspond to very different realities and the external marks of naïveté may represent inexperience, ignorance, stupidity, natural simplicity, concentration, lack of self-confidence, etc. Any one of these traits may pass as naïveté, and the simulation is generally involuntary and only accidentally useful. Skepticism which has displaced an earlier naïveté simulates trustfulness. The skeptical attitude of mind seems fond of cloaking itself in a pretended confidence; and it is not wholly pretense, for in becoming skeptical the spirit remains to some extent naïve. Real and intense skepticism is often painful and seeks relief in the pretense of belief. The man who lacks confidence in himself pretends to a general suspicion to cloak his own weakness. The stress of social life leads the skeptic to simulate sincerity and confidence. Here, again, utility is the motive. Pride and modesty have very complex manifestations. Modesty is characterized by the tendency to undervalue one's self, and, in occasions for action, to retire into the background. The proud man may simulate modesty from an exaggerated notion of the value of that trait. Anything which prevents action

gives, in the absence of counter indications, an appearance of modesty. Laziness, egoism, indifference, desire for quiet, fear of compromising one's self, contempt for one's associates, some of which are very closely allied to pride, all give rise to simulations of modesty, for the most part involuntary. One may be very modest in certain respects and exceedingly proud in others; a very great pride may work as modesty because of a repugnance for self-assertion or fear of disapproval. Such motives as devotion to an idea or sense of duty may lead a modest man to involuntary simulation of pride. A false modesty is created by the demands of social life, conventional formulæ of politeness, etc. Timidity is generally accompanied by pride and frequently conceals itself under a simulated aggressive boldness. Simulation is part of the nature of the timid. It is one of a number of compensations which serve as means of defense. Simulation of impassivity, indifference, and modesty (involuntary), are common in the timid. Timidity has its source in a discord between the individual and his environment, and implies an inner discord as well. The simulation of other traits to hide this want of harmony is a means to safety. Weakness of will and cowardice, also, imply a want of harmony between individual and environment. They commonly simulate boldness, audacity, courage, and give rise to bragging and undue excitement in the presence of danger. Lack of self-control in thought and action are other symptoms. Social support and the habit of adaptation give the appearance of confident courage to the weak-willed, which is betrayed by any change of environment or social conditions. An unusually strong will simulates timidity at times through voluntary reserve. Mildness of disposition is a sign of a psychological mechanism that functions easily and regularly without disturbing influences. It is readily confused with goodness, which may or may not accompany it. It is frequently simulated by the weak-willed and timid. A strong will and violent passions may wear this same guise, but they usually assert themselves after a certain point, whereas the truly mild temperament preserves its inner harmony in the face of the most hostile circumstances. Craving for variety, contrast, and action may induce the mild to simulate harshness and rudeness. Want of foresight simulates generosity, affection, goodness, etc. It springs from a lack of coördination in the mental life, a weakness of the synthetic functions, and is readily confused with other characteristics having the same source. Generosity is often but a mask of selfishness. Prudence easily simulates harshness, selfishness, and indifference. Self-restraint may cloak violent passions and impulses with indifference, and they are the more enduring for the subjection. Simulation pervades all life. No one of our actions is quite unmistakable in its meaning. We can never be sure that they are the correct interpretation of the tendencies that produce them. Every manifestation of character is an occasion of illusion for the observer and is so far a simulation. It cannot be an absolute expression of the personality behind it. Not only the imperfection of the means of expression, but a constant warring of impulses within and the pressure of certain neces-

sary ties of social life from without tend to make simulation universal. All action is the result of a balancing of motives, and implies some degree of the tendency opposed to that which it directly expresses. The elements of every trait of character are mixed, and the feeling that determines an act is made up of antagonistic tendencies; some of these are inevitably concealed, while others are over-emphasized. The very fact that simulation is universal, however, proves that it is never absolute. There is some basis in the real character for every simulated tendency; we pretend to no characteristics that have not some place in our nature. Simulation exists only because there is no contradiction between the systems of acts, impressions, and ideas there formed and the real state of the subject; it indicates a tendency of the mind to profit by its own weakness. The simulation of traits of character and the illusions of the observer tend to balance in the end. Simulation extends to deceiving not only others but ourselves. We are at great pains to convince ourselves that we possess the virtues and capacities that we most admire. We resort to various acts and attitudes for this purpose. Simulation is constantly changing in both quantity and quality, in epochs, in the sexes, and in individuals. On the whole, it seems to be on the decrease. Nevertheless, a certain amount of it seems inherent in all life.

C. E. GALLOWAY.

A Sixteenth Century Psychologist, Bernardino Telesio. J. L. MCINTYRE. Br. J. Ps., I, 1, pp. 161–177.

Telesio's great work, the *De rerum natura*, was published at Naples in 1586. The purpose of his system was to dislodge Aristotelianism from its dominant place in the philosophy of the period. The method which he advocated was empiricism, and his principle of inquiry was the uniformity of nature. Though Telesio affirms his complete acceptance of the Scriptures and the dogmas of the Church, yet the spirit of his philosophy was fundamentally naturalistic, and a few years after his death his books were placed upon the *Index*. For the explanation of nature, Telesio holds that there are two active principles, heat and cold, and a passive substrate through which the first two act. Heat and cold are endowed with sensation, and from their action in the bodies of animals consciousness arises. The mind is regarded as corporeal, a delicate and rarefied substance enclosed in the nervous system. Telesio explains, however, that man has another soul which is wholly divine and which acts through the natural soul. This is merely a theological admission and has no real connection with his theory. The natural soul of man differs from that of the brutes only in degree. Sensation is the basis of all mental life and results ultimately from the action of heat upon the mind stuff in the ventricles of the brain. The functions of the brain are: discrimination, retention, intelligence, organization of movements, and nutrition. Telesio's discussion of space perception is comparable to the empirical explanations given by the followers of Mill; his explanation of intelligence, also, is roughly analogous to the position

of the associational psychologists. It is based upon resemblances observed between objects of sense. Telesio carries his naturalism into ethics also. The only end which man can pursue is his self-preservation, and therefore virtue and vice are intellectual merely. The influence of Telesio was felt mainly through Campanella and Bacon.

GEORGE H. SABINE.

ETHICS.

The Relations of Ethics to Metaphysics. W. H. FAIRBROTHER. Mind, 49, pp. 38–53.

The question as to the relations of ethics and metaphysics may be put in two ways: (1) Are the ethical doctrines taught by the more important writers derived from their respective metaphysical beliefs? Or (2) *in abstracto*, is the subject-matter of moral science of such a kind that it is necessarily affected by our belief as to the ultimate nature of man and the universe? Taking up the first form, we may say with certainty that a great body of thinkers do base their ethics directly upon their metaphysics. Others are popularly regarded as reaching their ethical results by other roads than the metaphysical, especially Kant, Spencer, Mill, and the English moralists of the eighteenth century. But Kant's ethical and metaphysical doctrines are in reality completely interdependent; it is the same reason which as self-determining is practical, and as determined is speculative, and the unconditioned causality which the former gives in moral freedom is necessary for the systematic unity demanded, but not supplied by the latter. Spencer states definitely that the object of moral science is to deduce from the laws of life and the conditions of existence what kinds of action tend to produce happiness. The popular impression that his ethics is independent of metaphysical ideas is caused by his careless use of utilitarian language. As for Mill, his utilitarianism is confessedly based on the belief that men desire nothing but happiness, that this is a collective happiness, and has a concrete intelligible nature. It is true that the English moralists of the eighteenth century employed no philosophical theories, but this was because their attention was confined to the facts of moral approval and disapproval, and epistemological difficulties were avoided by recourse to moral faculty or feeling. The truth in the contention that ethics is independent of metaphysics is simply that our knowledge of ultimate reality is not yet complete enough to enable us to deduce an answer for every particular problem of detail. We must have a moral code, yet such a code cannot be entirely haphazard. Ethical theory must be in some way coördinated with speculative, since both deal with the same universe.

EDMUND H. HOLLANDS.

La morale de Renouvier. A. DARLU. Rev. de Mét., XII, 1, pp. 1–18.

The lack of clear exposition in Renouvier's *Science de la morale* has caused its importance to be overlooked. Though some of its problems

are now obsolete, others are of great importance. The work was inspired by the French Revolution. As a disciple of Kant who had also felt the effect of the struggle, he adopted Kant's ethical principle and made it the basis of his work, the principle that ethical science is distinct, not only from religion and metaphysics, but also from natural and social science. Conscience is the supreme datum. Renouvier's doctrine is individualistic and personality is the basis of his philosophy. Social relations exist only between individuals. Public morality is not distinct from private morality, and state institutions are but extensions of private relationships. Liberty is the starting-point of individual and social progress. The ideal state of humanity would mean a state of peace wherein autonomous nations were in harmonious association. Social liberty is measured by the amount of individual liberty, and the multiplication of free institutions means progress. Justice arises by the recognition of the validity of contracts. Opposed to self-interest, it becomes the consciousness of obligation, the supreme principle of practical morality, and the basis of social institutions. In applying moral laws to social needs, morality should make apparent the changes which social rights and duties undergo. Man's first duty is self-preservation. In the clash of desires incident upon satisfaction of personal interests, a state of war results, the temper of which still lingers in the industrial and moral world. Ethical questions resolve themselves into economic ones. Morality condemns as unjust the unequal distribution of wealth, and amelioration of conditions is to be secured by giving to labor a share in the wealth produced proportionate to the time and effort spent in its production, rather than in accordance with the law of supply and demand. Social reform is possible only through free association and mutual concession. Warfare and militarism are condemned as the source of social corruption. Permanent peace between states is possible only if there be a deeply pacific moral purpose within them. The socialistic ideas of peace, justice, and industry are the steps towards progress, the end of which is state autonomy and personal independence. Though overemphasizing individualism, Renouvier produced an ethical doctrine clear and consistent, and founded upon equity, justice, and peace.

FRANK P. BUSSELL.

La démocratie devant la science. BOUGLÈ. Rev. de Mét., XII, 1, pp. 57–73.

Science affirms that the spirit of democracy is opposed to the biological laws of nature, and hence must ultimately fail. In answer we may say that, though theoretically rigid, the laws of heredity, differentiation, and competition, are really not without exceptions. Democracy promotes social well-being by obeying the law of heredity. By diminishing arbitrary inequalities it aids competition, and by division of labor gives completer differentiation and development to human powers. But social evolution is different in nature from biological. Unrestricted competition is not suffi-

cient here. Personal rights and social ties must be safeguarded by assuring to each a share in the collective wealth. Democracy transcends the laws of biological evolution, applying them to its use but not being affected by them. Its goal is the attainment of a higher realm of being, the perfection of spiritual personality. Here the scientific judgment is inadequate either to determine the desirable or fix the limits of the attainable. A sense of the supreme worth of human life makes necessary measures which are opposed to the suffering incident upon natural survival through competition; and such a feeling for humanity is not amenable to judgment in the court of science. Biological analogy is inapplicable. Human societies must be subjected to historical comparison and analysis, and the sociological laws found to obtain must be made the basis of morality. By these laws also should democracy be judged, and its tendency to promote human weal or woe determined. The validity of the findings of social science will depend upon the recognition of individualism coexisting with a social spirit. These are indispensable, if democracy is to continue; and there is likewise need of humanizing culture and the rational choice of ends in accord with the supreme end as revealed by moral philosophy. Though the conclusions of science are unsatisfactory, and though we cannot yet foresee the results which sociological science may bring about, there is nevertheless no reason to believe that it will prove otherwise than encouraging.

F. P. BUSSELL.

HISTORY OF PHILOSOPHY.

Le naturalisme Aristotelicien. CLODIUS PIAT. A. f. G. Ph., IX, 4, pp. 530–544.

M. Piat describes the philosophical movement from the supernaturalism of Plato to the naturalism and theory of immanency of Aristotle and the Aristotelians. In the philosophy of Strato, the doctrine of immanence is carried to its logical issue, and the transcendency of a divine First Cause and of a Creative Reason is characterized as a metaphysical illusion. Aristotle had advanced a theory of nature in which there was no room for the idea of God as "pure form," and in the historical development of the school the idea was explicitly excluded. W. A. H.

Senecas Ansichten von der Verfassung des Staates. J. BREUER. A. f. G. Ph., IX, 4, pp. 515–529.

This article is an attempt to defend Seneca's political philosophy against Rubins's charges of inconsistency and inconstancy. Breuer points out that Seneca's praise of Cato was part of the fashion of the time, and that this praise does not refer to Cato's republicanism, but to his character. It was common custom to rank Cato for his moral grandeur with Socrates and Rutilius. Further, Seneca's censure of Cæsar and Pompey is not a con-

demnation of their imperialistic ideas, but of the ethical character of their lives and policies. Seneca gives emphatic expression in the *De clem.* to his conviction that monarchy is necessary for the Roman empire of his day, although he nowhere says that monarchy regarded absolutely is better than a republican form of government. On the contrary, the conclusion may be drawn from *De clem.* that, under ideal conditions, a republic which guarantees to the people the maximum of freedom is absolutely the best constitution. The decline, however, of the ancient morality and simplicity makes Rome's ancient republican liberty politically impracticable, and it is no evidence of contradiction or inconstancy when Seneca, as a sober, practical statesman, with his eye fixed on the civic needs of his time, declares the republican constitution to be unsuited to the conditions.

W. A. H.

Spinoza's demokratische Gesinnung und sein Verhältnis zum Christentum. W. MEIJER. A. f. G. Ph., IX, 4, pp. 455–485.

The author of this article in a former essay, *Wie sich Spinoza zu den Kollegianten verhielt* (*Archiv*, October, 1901), criticised adversely Menzel's statement that Spinoza's democratic sympathies were derived from the Arminians, and that his conversion to aristocracy was due to revulsion at the murder of De Witt. He here defends his position, and undertakes to prove from the *Tract. polit.*, *Tract. theol. polit.*, and from the life and letters of Spinoza, that Spinoza's political views never really changed, and that he considered democracy (*Tract. polit.*, XI, ii), not ochlocracy, to be a securer and better form of government than aristocracy. Further, in regard to Spinoza's relation to Christianity, the author undertakes to show that Christianity and Spinozism are incompatible. Not only is the one dualistic and the other monistic, but Spinoza explicitly denies the two central dogmas in Christianity, viz., the doctrine of the resurrection and the sonship of Christ (*Letters* 72, 73). He denies also the creation of the world, the immortality of the soul, the existence of sin and the devil, the biblical attributes of God, and the historical truth of miracles. W. A. H.

'Naiv' und 'Sentimentalisch' — 'Klassisch' und 'Romantisch.' BRUNO BAUCH. A. f. G. Ph., IX, 4, pp. 486–514.

The author discusses the historical parallel between the æsthetic terms 'naïve' and 'sentimental' (Schiller), on the one hand, and 'classical' and 'romantic' (the Hegelians), on the other. For Schiller as for Vischer, there is an antithesis between ancient and modern art. The former art is naïve and realistic; the latter critical and reflective. Schiller applies the term 'naïve' to the former, and 'sentimental' to the latter. Vischer characterizes them as 'classical' and 'romantic.' Naïveté in art is the treatment of an object purely as nature. Schiller's unity of 'sense' and 'reason,' 'nature' and 'spirit,' are the equivalent of Hegel's unity of

'corporeality' and 'significance,' of 'phenomenon' and 'idea;' and Hegel's conception of the classical and Schiller's conception of the naïve are one. The poet in his art is placed between two principles: reality, on the one hand, and idea, on the other. The character of the poet's art is determined by the ascendency of one or the other of these two principles, and the two feeling-modes of the sentimental (*i. e.*, romantic or modern) poet are satire and elegy. The satirical represents the incongruity of real and ideal, and the elegiac feeling-mode characterizes the poet whose satisfaction in the ideal outweighs his consciousness of the real. Although for Hegel nothing is more *beautiful* than the classic art, yet it is a *higher* form that exhibits the return of the spirit upon itself ("das Zurückgehen des Geistes auf sich selbst"), which is the mark of romanticism, or of sentimentalism in the terminology of Schiller. In this sense, the romanticism of Hegel and the sentimentalism of Schiller are one. Schiller's sentimentalism has nothing to do with that aspect of romanticism, which Hegel characterized as fantastic and quixotic. W. A. H.

NOTICES OF NEW BOOKS.

An Introductory Study of Ethics. By WARNER FITE. London and Bombay, Longmans, Green, & Company, 1903.—pp. vi, 383.

In defining the scope of his subject, Mr. Fite says that ethics is a study of practical life in its more general aspects; and the plan of his book is evidently determined by the conviction that theory is for the sake of practice, and by the desire to get behind the antagonisms of ethical theories to some agreement or compromise which can serve the purpose of practical guidance. He starts from the fact that there is a contradiction between the ideal and the practical, and between the interests of humanity and those of self. This fact gives rise to two fundamentally different types of ethical theory, viz., hedonism, which represents the claims of material needs and self interest; and idealism, representing the claims of ideal and disinterested aims (pp. 6, 29–33).

Although the same dualistic classification is reached in another way by tracing back ethical theories to their roots in one or the other of two divergent philosophies (p. 17), I think that the practical aim is fundamental in controlling Mr. Fite's arrangement of material; and this is also its best justification, since it is doubtless true that from the practical point of view, — the standpoint of tendency, of moral attitude, — hedonism and idealism may be said roughly to correspond to the well recognized Epicurean and Stoical attitudes toward life. If we must describe the otiose and the strenuous moral attitudes in philosophical language, the words hedonism and idealism are perhaps accurate enough for popular and practical purposes, though it seems to me that the moral attitude of a conscientious universalistic hedonist of the Sidgwick type is more properly described as Stoical than as Epicurean; and Mill, whether consistently or not, would certainly make the claim for his own system that, like Stoicism, it preaches a morality of self-devotion and sacrifice. No objection, however, need be taken to Mr. Fite's dualistic classification of ethical theories; since it is true that all types of ethical theory can be ultimately reduced to varieties of the view that pleasure is the supreme good, or of the view that virtue or perfection of character is the good.

And yet, in spite of the author's simplicity of outlines and clearness of style, I am afraid that 'thoughtful persons' who are not moral philosophers, and college 'students beginning the study,' will be rather confused, if not misled, by Mr. Fite's too simple classification and loose exposition of rival theories. In failing to act upon the familiar adage of giving the devil his due, he has done violence to the history of ethical opinion, and has set up an idol of his own manufacture as the typical deity of hedonism. Hence, I say, to at least one class of readers to whom the volume is ad-

dressed, — those who are not very familiar with ethical problems, — Mr. Fite's presentations may well prove rather confusing. They will learn in the first place that by 'pleasure' the hedonist means the pleasures of sense, sensuous gratification; that intellectual pleasures as such are an illusion; that the pursuit of knowledge is simply a more refined way of seeking sensuous pleasure (Chap. III); and then they will perhaps quite logically conclude that though Aristippus and Helvetius may have been hedonists, Epicurus and Mill and Sidgwick certainly were not. They may think at first that even Bentham was not a hedonist, because he held that, provided the quantity of pleasure is the same, poetry is as good as push-pin, — *i. e.*, he regarded the source of the pleasure as a matter of indifference, and did not confine pleasure to the sphere of the senses; but they will soon learn (p. 50) that reading poetry *is* ultimately sensuous pleasure, since its only real value is in contributing to material needs and physical welfare.

They will learn further that to the hedonist happiness and freedom from pain constitute ultimately our sole object of desire; that we are never interested in others for their own sake, or in any object for its own sake; that all our actions are directed toward the enjoyment of sensuous pleasure; that each of us is actuated solely by self-interest, — that is, by the demands of the bodily self (pp. 86, 225); but they will fail to find any clear distinction between psychological and ethical or rational hedonism, or between the egoistic and the universalistic forms of the pleasure theory. Sidgwick will be a puzzle to them, and Leslie Stephen will be classed as an idealist, since idealists, according to Mr. Fite, have a monopoly of the conception of society as an organism.

Again, the reader will learn that the hedonistic theory may be regarded as a mechanical view of conduct; that the general opposition between hedonism and idealism rests upon the distinction between mechanical and conscious action; that for hedonism the human being is a machine; that to the hedonist *and* materialist nothing but the individual atom is absolutely and permanently self-identical; that the hedonistic point of view is that of external observation; that it denies personal identity and purposive activity; that the self of hedonism is the human body; that a state of feeling is pleasurable to the extent that effort is absent; that the quintessence of pleasure is the languorous dreamy state pictured in the Oriental paradise; that in relation to practice hedonism tells us to conform to the world of mechanical forces, since no effort of ours can modify conditions so as to make them more conformable to ideal ends (pp. 95, 111, 192, 203, 209, 290, 324). In short, hedonism regards man as a conscious automaton irresistibly seeking (if, indeed, he can be said to *seek* anything) sensuous gratification. The reader would be obliged to conclude that the hedonist is necessarily a materialist, and that the general happiness is not regarded by any as an ideal end; and he would be at a loss to explain the inconsistency of the English utilitarians in their effort to improve social conditions

as a means to the greater happiness of mankind, — or else he would decide that they were not hedonists, but idealists.

Space does not permit me to touch upon Mr. Fite's discussion of idealism, or his method of solving practical moral problems by a compromising diagonal between hedonism and idealism; but perhaps enough has been said to justify the opinion that if, instead of attempting to reconstruct the situation as a whole, from the standpoint of philosophical consistency, he had more closely adhered to his original intention of furnishing a definition and analysis of the several types of ethical theory as actually held, he would have written a less vulnerable book. I agree with Mr. Fite that ethics cannot remain permanently divorced from metaphysics, and that there is a logical connection between the moralist's general philosophical attitude and his ethical position; but in forcing the views of the hedonist to what he regards as their logical implications, in identifying them with a mechanical philosophy, an associational psychology, a Lamarckian biology, and a sensualistic view of pleasure, — and in identifying idealism with the antithesis of all this, — he is stating what he thinks should be the logical position of hedonists and idealists respectively, but he is also giving a very inaccurate and misleading presentation of the facts; and this because he has chosen to present hedonism as of a single stereotyped form, while the word idealism is regarded as broad enough to include everything except the crassest form of egoistic hedonism.

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The Nature of Man: Studies in Optimistic Philosophy. By ÉLIE METCHNIKOFF. Translation by P. CHALMERS MITCHELL. New York and London, G. P. Putnam's Sons, 1903. — pp. xvi, 309.

M. Metchnikoff's enquiry is essentially teleological. He investigates the nature of man for the sole purpose of describing and evaluating the natural end of human life. The thesis, which embodies the author's biological convictions and determines the argument of his book, is that certain fundamental disharmonies exist between the human organism and its environment. Because of these disharmonies man is unable to accomplish satisfactorily the round of his existence and stumbles along through many ills to an unsatisfactory end. Self-consciousness reveals to man and intensifies the evils which disharmony originates. As a first reaction, man confuses the disharmony with the total life process and conceives of life here and now as evil. The whole, however, asserts its preëminence over the parts and brings about a second reaction, viz., the thought of a future life in which evil shall be removed and happiness attained. Thus arise religion and philosophy, the one a blind faith in immortality as a palliative for human ills, the other a reflective promulgation of the same error. Philosophy refutes religion and in turn resolves itself into negation. It thus prepares the way for the true solution of life's problem by the exact and ob-

jective methods of science. Before proceeding to indicate what science has to say by way of positive construction, Metchnikoff applies his criticism of religion and philosophy to pessimism and optimism. Both religion and positive philosophy regard this present life as evil, but a future life as good. They are pessimistic as to present existence, but optimistic as to the life beyond the grave. The sceptical form of philosophy, to which a larger knowledge and the exact methods of science inevitably lead, destroys the optimistic outlook and brings man face to face with present life and that which scepticism takes to be the truth, viz., pessimism. Mankind, accordingly, appears to be placed in the following dilemma. Either cast aside reason and assuage the evils and sorrows of existence by passive endurance now and ungrounded hopes for the future, or follow reason, abjure will-o'-the-wisp beliefs, and endure without hope a meaningless and miserable existence. Science, however, frees man from the dilemma by cutting beneath it. Pessimism recognizes the disharmonies of life, but stands helpless before them. Optimism also recognizes the facts of disharmony, stands blindly before them, and is carried away, by the inner impulse of the desire to live, to inadequate and unintelligent conclusions. Science recognizes both the essential evils of human life and the dominant desire of man to overtop them. But it neither stands helplessly before them nor flies to impossible conclusions. It seeks to understand the character and origin of the evil as also to take practical measures for its removal. Viewed scientifically, evil has its origin in disharmony between the physical organism of man and his environment. This is accounted for by man's peculiar development. For man must be regarded in some senses as a monster. Arising as a sport in the biological world, his origin was probably sudden after the fashion of species whose possibility was foreseen by Darwin, but whose actuality was first demonstrated by De Vries. Man's variation consisted essentially in "a brain of abnormal size, placed in a spacious cranium." This variation enabled him to outdistance other forms of life, and laid the foundations of his wonderful historical development. The sudden advantage was at the same time a disadvantage. It too quickly put out of use certain structures of man's physical organism, and gave opportunity for a greatly enlarged exercise of function on the part of structures inadequately developed to their freer and more complex use. Once man has come to appreciate this fact, his life problem ceases to be a useless worrying over the actual fact of disharmony or a soothing of his pain by senseless palliatives which do not relieve. It becomes an active, aggressive campaign, the possibilities of which Pasteur has so brilliantly illustrated.

There remains, however, the final fact of death. How can science meet that fact and the stubborn development of the instinct to live? They appear to stand in irreconcilable antagonism. The difficulty cannot be resolved by the thought of a continuance of life after death. The fact that mind is a function of a physical organism, which inevitably decays and disintegrates, effectively disposes of any such conception. Science can accom-

plish two things. By studying the processes of repair it can prolong life, and by steady adherence to its own doctrine of ultimate dissolution it can restrain and ultimately remove the fear of death.

In criticism of the volume, little need be said. M. Metchnikoff has thrown a great light upon the origin of evil and the rational method of its treatment. It appears to the reviewer that Metchnikoff has found the nerve of the difficulty common to pessimism and optimism and their corresponding factors in religion and philosophy. That his treatment of religion and philosophy is one-sided and utterly inadequate, must be apparent to any one seriously acquainted with either. But this should not blind the reader to the fact that the author finds the origin and solution of the problem of evil *within the life process itself.* This in itself is a tremendous gain and puts the problem upon a firm and sure foundation. Agreement or dissent from M. Metchnikoff's positivism is entirely a secondary consideration.

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La poètique de Schiller. Par Victor Basch. Paris, Félix Alcan, 1902. — pp. 297.

The author of this able book first discusses the sources from which Schiller's theory of poetry springs, and finds them especially in the Kantian philosophy, in Winckelmann's conception of Greek art, in Herder's doctrine of the poetry of nature and the poetry of art, and in the artistic practice of Goethe. Then, after outlining the great poet's general theory of æsthetics, he makes a careful analysis of Schiller's theory of poetry as it is set forth in his treatise on naïve and sentimental poetry, his works on dramatic poetry, and his correspondence with Körner, Wilhelm von Humboldt, and Goethe.

In conclusion, he subjects the principal theories of Schiller to a thorough criticism. Professor Basch shows first that the method employed is the *a priori* method, and rejects it. Poetics, like all the æsthetic sciences, is for him an *explicative* and not a *normative* science, and as such its method must be psychological, historical, comparative, classificatory, and genetic. Schiller bases his theory not on concepts derived inductively, but on logical concepts, concepts deduced from the concept of humanity, and his whole system consequently lacks reality. It is *necessary*, he declares, that poetry in general, as the perfect expression of humanity, be divided into naïve and sentimental poetry, and sentimental poetry into satirical, elegiac, and idyllic poetry. Schiller believes that sense and reason were originally in harmony in man, that the emotional, intellectual, and moral natures acted in unison, and that the naïve poet embodied this harmony. As civilization advances, he proceeds to tell us, a division occurs between the intellectual nature and the senses, the will becomes conscious of itself and rebels against the demands of the desires, opposing to them the imperative of duty. The

sentimental poet represents this stage. The harmony will finally be re-established, the senses will not demand more than the reason prescribes, the unconscious harmony of primitive man will become the conscious harmony of the civilized man. The ideal poet will give expression to this stage.

Professor Basch refuses to believe that primitive men are the perfect, serene, and harmonious beings that Schiller imagines them to be. Besides, among the naïve beings, as Schiller defines them, the intellectual faculties proper have not yet been developed, and cannot therefore enter into relations of harmony or discord with the senses. It is also a mistake to call the Greeks naïve beings. Moreover, sense and reason are not separated by an impassable chasm, as Schiller and Kant would have it, but the intellectual faculties cannot be conceived without the faculties of sense; the psychical forces constitute an organism in which every organ works for a common end. Schiller also fails to give a satisfactory definition of the concept of nature, which plays such a fundamental rôle in his theory.

Although neither the method, nor the premises, nor the conclusions of Schiller's poetics have any real value, Professor Basch admits that the problems which the poet raised deserve attention, and recognizes the speculative depth, the dialectical vigor and subtlety, and the eloquence which he brought to his task. Besides, the influence exercised by him on the development of literature, æsthetics, philosophy, and literary history was immense. Whatever may be our objections to Schiller's theory, it must be confessed that from his treatise on naïve and sentimental poetry dates a new era. Without this work we should not have had the critical writings of Friedrich Schlegel nor the *Æsthetics* of Hegel.

FRANK THILLY.

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St. Anselm's Proslogium, Monologium, an Appendix in Behalf of the Fool by Gaunilon, and Cur Deus Homo. Translated from the Latin by SIDNEY NORTON DEANE. Chicago, The Open Court Publishing Co., 1903.—pp. xxxv, 288.

The Latin of the father of orthodox scholasticism is, like that of most of the schoolmen, easy to read, but all but impossible to translate. Neither the niceties nor the characteristic ambiguities of the scholastic terminology can be easily reproduced in such a language as English. Any translation, therefore, is likely to be a poor substitute for the original; and for most of those who are competent to study such a philosopher as Anselm a translation should also be a superfluity. Yet the publishers of this volume have done a useful thing in giving us a modern English version of Anselm's most important philosophical writings; it is singular that the thing has not been done long since. The ontological argument is so much talked about, even in elementary philosophical teaching, that the text of it should be made accessible to all students and to the general reader. Anselm's *Cur Deus homo* has been available since 1855 in the translation of J. G. Vose;

that translation is reprinted in the present volume. But the *Monologium* and *Proslogium* apparently receive their first presentation in English in Mr. Deane's rendering. The translation, to judge from a number of selected passages, is painstaking and for the most part fairly trustworthy. Curiously, the translator has been least happy in his handling of the opening chapter of the *Monologium* (pp. 35–37). In the very first sentence *essentia divinitatis* is inexcusably rendered "the being of God," — with the effect of obscuring the contrast between the theme of the *Proslogium* (which treats *de Dei existentia*) and that of the *Monologium*, which is primarily a meditation on the divine nature and attributes. In the next sentence, the translator mistakes the antecedent of a pronoun; instead of "nothing in Scripture should be urged on the authority of Scripture itself," read "nothing in this meditation should be urged on the authority of Scripture." Later in the same chapter, Mr. Deane omits to translate the words *ut quidquid facerem illis solis a quibus exigebatur esset notum et*, and thereby makes Anselm say rather absurdly: "I was led to this undertaking in the hope that whatever I might accomplish would soon be overwhelmed with contempt." Similar errors occur occasionally, but less frequently, in other passages. In *Monol. XV*, Anselm's peculiar antithesis of *ipsum* and *non ipsum* (*melius ipsum esse ac non ipsum*) is rather misleadingly rendered "to be it is better than not to be it"; the sense is simply "it is better than anything not-itself." The translator has a singular fashion of rendering *omnino* (which assumes almost a technical sense in the schoolmen) by "in general," (*e. g.*, "what is, in general, better"); it means, of course, just the opposite, *i. e.*, "absolutely." In Gaunilon's *Liber pro insipiente*, the sense of § 2 pretty completely disappears in the translation. These occasional failures limit, but do not destroy, the general serviceableness of the volume for the English reader.

Dr. Carus has prefixed to the translation Weber's summary of Anselm's system (a poor summary so far as the ontological argument is concerned), and comments or criticisms on the ontological argument from Descartes, Spinoza, Locke, Leibniz, Kant, Hegel, Dorner, Lotze, and Professor Flint. It would have been well to include with these one or two passages,—*e. g.*, Aquinas, *Summa* I, q. 2, a. i, 2, and a chapter from Father Boedder's *Natural Theology*,—expressing the negative attitude of later and present-day scholasticism towards Anselm's argument.

ARTHUR O. LOVEJOY.

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The Philosophy of Hobbes, in Extracts and Notes collected from his Writings. By FREDERICK J. E. WOODBRIDGE. Minneapolis, The H. W. Wilson Co., 1903. — pp. xxxiv, 391.

Professor Woodbridge has rightly felt that a compact and inexpensive volume of selections from the English writings of Hobbes, in which the whole system of the philosopher of Malmesbury should be set forth briefly

in his own words, would meet a genuine need. The non-political parts of Hobbes's system have not hitherto been very easily accessible to college students or to the general reader; yet no philosopher is better qualified to speak for himself, instead of reaching his readers through the medium of second-hand expositions. The present volume brings together, from the Molesworth edition, the first six chapters of the English version of the *De corpore;* the important second chapter of the *Human Nature;* Chapters I–III of the *De cive* (*Philosophical Rudiments concerning Government*); a fragment of the little treatise on *Liberty and Necessity;* and the greater part of Chapters I–XVIII, XXXI, and XLIII from the *Leviathan*. In footnotes, brief citations of parallel passages from other writings are given. The volume contains a portrait of Hobbes and a (rather bad) reproduction of the frontispiece to the first edition of the *Leviathan*. Aubrey's delightful little life of Hobbes is prefixed to the selections. There are no notes and no introduction, the editor desiring to leave the reader "an immediate and uncolored impression of the author." Certainly Hobbes has small need of explanatory aids.

The execution of the compiler's task gives some occasion for criticism. The selection of passages for inclusion is far from felicitous. Hobbes's "First Philosophy," with his fundamental conception of motion as the principle of all things and his typical attempt at a mechanistic cosmology,—one of the more important and less accessible parts of the system,—is wholly unrepresented; while nearly two-thirds of the volume are given up to the *Leviathan*, of which several cheap and convenient editions already exist. Yet, if the *Leviathan* was to be included, it is not clear why so important a part of that book as Chapter XXI ("On the Liberty of Subjects") was (except for a few unessential sentences in a footnote) left out. There are few things in Hobbes more curious than the limitations which, in that chapter, he puts upon the obligation of the subject to obey the sovereign. Similarly Chapters XXVI and XXIX ought to have been included. The reader should have been warned that the English version of the *De corpore* is not from Hobbes's own hand, and that it is marred by occasional omissions and mistranslations. The editor might at least have been expected to correct the radical inversion of the sense at the beginning of § 13 of Chapter VI (pp. 65 f.), since the error has already been pointed out by Robertson. At p. 161 *n.* Molesworth's mangled and meaningless printing of Hobbes's classification of voluntary and involuntary actions is reproduced, in spite of the fact that Robertson has established the correct text (*Hobbes*, p. 234 *n.*). In fine, what we did not greatly need,—an incomplete reprint of the *Leviathan*,—has been given us; what we did need,—a selection of representative passages covering the whole range of Hobbes's theoretical philosophy, carefully edited, with corrections of the errors of earlier editions,—has been given us only in very small part. For that part, however, we may be grateful.

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Nietzsches Philosophie. Von ARTHUR DREWS. Heidelberg, Carl Winter's Universitätsbuchhandlung, 1904.—pp. viii, 561.

Dr. Drews regards Nietzsche and his philosophy as a striking instance of the theoretical and practical ruin resulting from the prevailing tendency to identify consciousness and being or existence. Like Descartes and Kant too, for that matter, the philosophers of to-day assume the validity of *cogito ergo sum* and make it the basis of their various systems. Such an assumption is without foundation and even patently false, and only through the recognition of a reason other than individual in that it is absolute, can philosophy hope to escape inherent contradiction. With the rest Nietzsche endeavored to explain being directly from his own subjective consciousness, the essence of which he regarded as the empirical will. He identified the true culture with the struggle to obtain complete inner and outer freedom for this individual ego, and his entire philosophy is an attempt to describe the nature and the essential conditions of such freedom. In the prosecution of his task he fell into countless absurdities, which are themselves instructive because they are due to the falsity of the original premise. The pathos of Nietzsche's personality lies in the earnestness with which he lived out his convictions, and his sad fate exhibits the practical futility of his views just as the impossible statements in his books show their theoretical absurdity. If carried to its logical consequences, every attempt to attain freedom for the individual apart from the absolute self must end, as his did, in unconsciousness.

However one regards this view of the nature of Nietzsche's fundamental error, the account of his life and philosophy in which it is set forth must be admitted to be complete and in most respects satisfactory. The criticism of the particular theories is often suggestive even where one is compelled to disagree with the writer's interpretation. The great fault of the book is its length. All that is essential in it could easily have been contained in one-third the present number of pages, and such compression into a volume of reasonable size would have added greatly to its attractiveness and value.

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Freedom and Responsibility. By ARTHUR TWINING HADLEY. New York, Charles Scribner's Sons, 1903.—pp. 174.

President Hadley's Yale Lectures on The Responsibilites of Citizenship bear the full title of *The Relations between Freedom and Responsibility in the Evolution of Democratic Government.* The book is thus not what its abbreviated title might imply, and what some passages in it would suggest, a treatise in philosophy; but a study in the field of the history of social institutions with what the preacher would call an 'application' to current conditions in the United States. As such, it contains wholesome doctrine which deserves the approval the lectures, as delivered, received at the hands of the public press.

Freedom, Dr. Hadley holds, is not an inherent human right. Its historic development and its essential nature indicate that it has come into being and can be exercised only in the presence of restraints and sanctions. It can be safely exercised in democratic government only where the ethical sense of responsibility has led to the capacity of *self* restraint. A *laissez faire*, selfish individualism will not bear the fruits of a true freedom. This conclusion that political freedom should be exercised only where there has been training in responsibility is worth emphasis at the present time, as well as its necessary corollary that where by training the sense of responsibility has been produced, there freedom should be allowed.

The effort to show that "freedom of the will is an institution rather than a metaphysical conception," and that the "historical explanation of the idea of free will is more satisfactory than the psychological explanation" (p. 70), rests on the common enough confusion current as regards the meaning of freedom of the will, which disregards the distinction between freedom as the capacity of self-direction towards an ideal, and freedom as the right to shape conduct with reference to any freely chosen ideal,—between choosing one's ends and doing what one wants to. One view considers freedom as a psychological necessity or a metaphysical reality; the other regards it as a social and political right. The two points of view are not mutually exclusive. In fact, it is only as the former is presupposed that the latter presents any problem but one in mechanics.

ARTHUR L. GILLETT.

HARTFORD, CONN.

The following books also have been received:

Man's Place in the Universe. By ALFRED R. WALLACE. New York, McClure, Phillips, & Co., 1904. — pp. viii, 326.

Elements of Metaphysics. By A. E. TAYLOR. London, Methuen & Co., 1903. — pp. xvi, 419. 10s. 6d.

The Grand Survival: A Theory of Immortality by Natural Law. By OSWALD STOLL. London, Simpkin, Marshall, Hamilton, Kent, & Co., Ltd., 1904. — pp. 202. 3s.

Kant's Educational Theory. By EDWARD F. BUCHNER. Philadelphia and London, J. B. Lippincott & Co., 1904. — pp. xvi, 309.

Columbia University Contributions to Philosophy, Psychology, and Education, Vol. X, No. 2: The Free-Will Problem in Modern Thought. By WM. H. JOHNSON. New York, The Macmillan Co., 1903. — pp. 94. 75 cents.

The Same, Vol. XI. No. 2: Heredity, Correlation, and Sex Differences in School Abilities. Edited by EDWARD L. THORNDYKE. New York, The Macmillan Co., 1903. — pp. 60. 75 cents.

University Studies Published by the University of Nebraska, Vol. IV, No. 1. I. *The Kinetic Theory of Economic Crises.* By W. G. L. TAY-

LOR; II. *Validity of the Ergograph as a Measurer of Work Capacity.* By T. L. BOLTON and E. T. MILLER. Lincoln, Neb., 1904. — pp. 150. $1.00.

The Heart of Ethics. By GEORGE H. PALMER. Berkeley, Cal., The University Press, 1903. — pp. 20.

Geschichte der griechischen Philosophie. Von A. DÖRING. Zwei Bände. Leipzig, O. R. Reisland, 1903. — pp. xi, 670; vi, 585. M. 20; Gb. M. 22.40.

Historische Untersuchungen über Kants Prolegomena. Von BENNO ERDMANN. Halle a. S., M. Niemeyer, 1904. — pp. vii, 144. M. 3.60.

Naturbetrachtung und Naturerkenntnis im Altertum. Von. FR. STRUNZ. Hamburg und Leipzig, L. Voss, 1904. — pp. 168.

Friedrich Nietzsche: Darstellung und Kritik. Von J. J. HOLLITSCHER. Wien und Leipzig, W. Braumüller, 1904. — pp. 270. M. 5.

Die Realität der Gottesidee. Von GUSTAV CLASS. München, C. H. Beck. 1904. — pp. 94. M. 2.

Ideen zu einer jesuzentrischen Weltreligion. Von KARL ANDRESEN. Zweite umgearbeitete Auflage. Leipzig, Lotus-Verlag, 1904. — pp. viii, 373.

Wissen und Glauben. Sechzehn Vorträge von C. GÜTTLER. Zweite Auflage, München, C. H. Beck, 1904. — pp. vii, 210. M. 3. Gb. M. 4.

Leibnizens Apriorismus im Verhältnis zu seiner Metaphysik. Von A. SILBERSTEIN. Berlin, Mayer und Müller, 1904. — pp. 74. M. 1.60.

Egoismus und Altruismus als Grundlage des Sittlichen. Von G. KUTNA. Berlin, Mayer und Müller, 1903. — pp. 108. M. 2.

Les théories socialistes au XIX^e siècle. Par E. FOURNIÈRE. Paris, F. Alcan, 1904. — pp. xxxi, 415. 7 fr. 50.

Le sentiment du beau et le sentiment poétique. Par MARCEL BRAUNSCHVIG. Paris, F. Alcan, 1904. — pp. 240. 3 fr. 75.

La parole intérieure. Par VICTOR EGGER. Paris, F. Alcan, 1904. — pp. vii, 326.

Combat pour l'individu. Par GEORGES PALANTE. Paris, F. Alcan. — 1904. — pp. 231. 3 fr. 75.

L'absolu, forme pathologique et normale des sentiments. Par L. DUGAS, Paris, F. Alcan, 1904. — pp. 181. 2 fr. 50.

La philosophie ancienne et la critique historique. Par CHARLES WADDINGTON. Paris, Librairie Hachette et Cie., 1904. — pp. xvi, 388.

Descartes, directeur spirituel: correspondance avec la Princesse Palatine et la Reine Christine de Suède. Par VICTOR DE SWARTE. Paris, F. Alcan, 1904. — pp. iii, 292.

Notes sur l'histoire générale des sciences. Par LOUIS FAVRE. Paris, Schleicher, Frères et Cie., 1904. — pp. 131. 2 fr.

NOTES.

Professor Frank Thilly of the University of Missouri has accepted a call to the Stuart professorship in Psychology in Princeton University.

Professor Geo. M. Stratton of the University of California has been appointed Professor of Experimental Psychology in the Johns Hopkins University.

The fourth annual meeting of the Western Philosophical Association was held on April 1 and 2, at the University of Missouri, Columbia, Mo. The following officers were elected for the ensuing year: President, Professor A. Ross Hill, University of Missouri; Vice-President, Professor E. L. Hinman, University of Nebraska; Secretary and Treasurer, Professor A. O. Lovejoy, Washington University; additional Members of Executive Committee, Dr. H. W. Stuart, University of Iowa, and Professor F. C. Sharp, University of Wisconsin. A full report of the proceedings will be published in the next issue of the REVIEW.

The Southern Society for Philosophy and Psychology was organized February 23 in Atlanta, Ga. Its officers are: President, Professor J. Mark Baldwin, Johns Hopkins University; Secretary, Professor Edward Franklin Buchner, University of Alabama; Council, the President, Secretary, and Dr. William T. Harris, Washington, D. C., Mr. Reuben Post Halleck, Louisville, Ky., and Professor A. Casewell Ellis, University of Texas. The aim of the organization is to promote the welfare of philosophy and psychology in southern institutions.

A meeting of experimental psychologists was held at Cornell University, April 4 and 5. The papers read fell into four main groups. (1) Professor Sanford described Experiments on Idiots, and Professor Witmer discussed the Laboratory Investigation of Backward children. (2) Professor Judd read a paper on the Analysis of Movements made in Simple and Compound Reactions; Dr. Whipple criticised the Simple Reaction as a Test of Mental Ability; and Professor Seashore offered some comments on the psychological term 'Observer' (paper read in absence). Professor Witmer also spoke on shortest reaction values, and on the distinction of sensory and muscular reactions. (3) Professor Judd reported an investigation of Eye Movements studied by photography, with special reference to the Müller-Lyer, Poggendorff, and Zöllner Illusions; and Professor Pillsbury described an Apparatus for investigating Torsion during Eye Movement, with some Results. (4) Mr. Stevens outlined a Study of Attention by the Method of Expression; Professor Pillsbury spoke upon the Influence of Closing Eyes upon Attention Waves; and Mr. Ferree discussed the part played by adaptation in the phenomena of Visual Attention. Other papers read were: Dr. Whipple, Difficulties in the Use of the *A*-Test; Dr. Baird, Recent

Work in Perimetry; Professor Judd, Imitation of Tones, with and without Distraction. Demonstrations were made by Professor Sanford (a novel form of color mixer), Dr. Whipple (an apparatus for determining the relative legibility of the small letters), and Mr. Sabine (speed regulator for the von Frey Limen Gauge). Five papers were read by title: Dr. Baird, Convergence and Accommodation in the Perception of Depth; Mr. Galloway, Fluctuations of Attention and Vasomotor Waves; Miss Castro (paper introduced by Professor Angell), Experiments on the Interrelations of Taste and Smell; Professor Titchener, The 'Psychophysical Series' as a Training Experiment, and Type *vs.* Instruction in Psychophysical Work. Some time was also spent in inspection of the psychological and psycho-educational laboratories.

Professor James Ward, of Cambridge University, will lecture before the Summer School of the University of California, and will also be present at the Congress of Arts and Sciences in St. Louis.

Professor Benno Erdmann, who is also to speak at the St. Louis Congress, has received a call from Bonn to the University of Tübingen.

We give below a list of articles, etc., in the current philosophical periodicals:

THE PSYCHOLOGICAL REVIEW, XI, 2: *W. L. Bryan*, Theory and Practice; *Max Meyer*, On the Attributes of the Sensations; *Boris Sidis*, An Inquiry into the Nature of Hallucinations, II; Discussion.

THE AMERICAN JOURNAL OF PSYCHOLOGY, XV, 1: *W. P. Montague*, A Theory of Time-Perception; *B. R. Andrews*, Auditory Tests; *E. B. Titchener*, Some New Apparatus; *I. M. Bentley* and *E. B. Titchener*, Ebbinghaus's Explanation of Beats; *C. Spearman*, The Proof and Measurement of Association between two Things; *I. M. Bentley*, Professor Cattell's Statistics of American Psychologists; Nocturnal Emissions; Literature.

THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS, I, 5: *A. K. Rogers*, The Relation of the Science of Religion to the Truth of Religious Belief; *H. B. Alexander*, The Concept of Consciousness; Discussion; Reviews and Abstracts of Literature; New Books; Notes and News.

THE PSYCHOLOGICAL BULLETIN, I, 4: *C. E. Seashore*, The Experimental Study of Mental Fatigue; *H. H. Bawden*, Recent Tendencies in the Theory of the Psychical and the Physical; Psychological Literature; New Books; Notes; Journals.

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE, XXXIV, 2: *C. M. Giessler*, Das Geschmackvolle als Besonderheit des Schönen und speziell seine Beziehungen zum sinnlichen Geschmack; *G. Abelsdorff* und *H. Feilchenfeld*, Über die Abhängigkeit der Pupillarreaktion von Ort und Ausdehnung der gereizten Netzhautfläche; *Felix Bernstein*, Das Leuchtturmphänomen und die scheinbare Form des Himmelsgewölbes; Literaturbericht.

XXXIV, 3 u. 4: *B. Groethuysen*, Das Mitgefühl; *W. A. Nagel* und *K. L. Schæfer*, Über das Verhalten der Netzhautzapfen bei Dunkeladaptation des Auges; *W. A. Nagel*, Einige Beobachtungen über die Wirkung des Druckes und des galvanischen Stromes auf das dunkeladaptierte Auge; *G. Abelsdorff* und *W. A. Nagel*, Über die Wahrnehmung der Blutbewegung in den Netzhautkapillaren; Literaturbericht.

REVUE PHILOSOPHIQUE, XXIX, 2: *Kozlowski*, L'évolution comme principe philosophique du devenir; *G. Dumas*, Saint-Simon, père du positivisme (1er article); *G. Batault*, L'hypothèse du "retour éternel" devant la science moderne; *Lapie*, Recherches sur l'activité intellectuelle; Analyses et comptes rendus; Revue des périodiques étrangers; Livres nouveaux.

XXIX, 3: *Cantecor*, La science positive de la morale (1er article); *Brenier de Montmorand*, Ascétisme et mysticisme: étude psychologique; *G. Dumas*, Saint-Simon, père du positivisme (Fin).; *G. Milhaud*, Les principes des mathématiques; Analyses et comptes rendus; Revue des périodiques étrangers; Livres nouveaux.

ARCHIVES DE PSYCHOLOGIE, No. 9: *E. Yung*, Recherches sur le sens olfactif de l'escargot; *Ed. Claparède*, Le mental et le physique d'après L. Busse; *A. Lemaitre*, Des phénomènes de paramnésie; Faits et Discussions; Bibliographie.

No. 10: *J. Larguier des Bancels*, De la mémoire; *A. Lamaitre*, Audition colorée hallucinatoire, stabilité et hérédité des photismes; *W.-M. Kozlowski*, Le plein et le vide; Faits et discussions; Bibliographie.

JOURNAL DE PSYCHOLOGIE NORMALE ET PATHOLOGIQUE, I, 2: *Pr. Pick*, Les zones de head et leur importance en psychiatrie; *F.-L. Arnaud*, Idées de grandeur précoces dans le délire de persécution chronique; *F. Houssay*, Moeurs et régimes; *G. Durante*, Considérations générales sur la structure et le fonctionnement du système nerveux (1er article); Notes et discussions; Bibliographie.

RIVISTA FILOSOFICA, VI, 5: *F. Bonatelli*, Le categorie psicologiche; *R. Nazzari*, L'uomo di genio per gli psichiatri e gli antropologi; *O. Nazari*, La concezione del mondo secondo il Bhogavadgita; *A. Gnessotto*, Nota sul canone del metodo indiretto di differenza di J. S. Mill; Rassegna pedagogica; Rassegna bibliografica; Notizie e pubblicazioni; Necrologio; Sommari delle riviste straniere; Libri ricevuti; Indice dell'annata.

RIVISTA DI FILOSOFIA E SCIENZE AFFINI, II, 5–6: *E. Zamorani*, A chi legge; *R. Ardigò*, Sentire; *G. Vailati*, La teoria aristotelica della definizione; *P. Orano*, Max Stirner in Italia; *F. Momigliano*, Un pubblicista, economista, e filosofo del periodo Napoleonico (Melchiorre Gioia); Rassegna di filosofia scientifica; Fra i libri; Notizie; Indice degli articoli originali dell'annata 1903; Libri ricevute e sommari di riviste.